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SUPPLEMENT SERVICE MANUAL (For GPM)

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1.1 Overview

This specification sheet covers the "Panasonic UF-311" plain paper facsimile transceiver. It can transmit and receive on the public switched telephone network (PSTN) in the modes conforming to CCITT Group 3 recommendation.

1.2 General Features and Functions

(1) **Thermal Ink-jet Printing**
Clear picture quality is obtained by employing a thermal inkjet printing method on plain paper. It can be used on A4, Letter or Legal size paper.

(2) **Disposable Print Cartridge**
The ink supply is contained in a small disposable cartridge, which allows easy and quick replacement by the operator.

(3) **Easy Maintenance**
The thermal inkjet printing mechanism does not use a drum, a developer unit or toner. Resulting in an easily cleaned and maintained machine.

(4) **300dpi Resolution (Receiving Mode Only)**
The 300 dpi mode is available on receiving mode only.

(5) **Letter size scanning**
Letter size document is the maximum document width that can be scanned and transmitted.

(6) **Automatic Document Feeder**
Automatic Document Feeder feeds the documents on the document tray automatically starting with the bottom page.
Capacity : 20 documents of average thickness and of the same size.

(7) **Speedy transmission**
The use of MMR Coding with ECM achieves faster transmissions.
Short Protocol reduces hand-shake time by shortening Phase B, D and E.

(8) **Error Correction Mode (ECM)**
Error Correction Mode which conforms to CCITT Recommendation, allows error-free data transmission. ECM with MMR Coding also conforms to CCITT Recommendation.

(9) **Automatic Dialing Function**
Up to 50 stations (49 stations : for U.K.) can be easily dialed by One-Touch Dialing or Abbreviated Dialing Function. Any other stations can be dialed directly on the keypad by entering the full telephone number.

(10) **Memory Transmission**
The contents of a document can be stored into the document memory first, then transmitted from memory. Operator's attendance until transmission ends is not necessary.

(11) **Multi-station Transmission**
Using the document memory, the document can be transmitted to multiple destinations (up to 53 stations (52 stations for U.K.)).

(12) Deferred Transmission
A built-in 24-hour timer allows a document to be transmitted at a preset time. Using with the document memory, the document can be transmitted to multiple stations (up to 50 stations / up to 49 stations for U.K.) with the timer.

(13) Substitute Reception
The contents of a document will be received into the document memory if the recording paper or ink runs out during reception. The stored documents can be printed out after replacing recording paper or ink cartridge.

(14) Halftone
For transmission, this function ensures high quality reproduction of grey-shaded or photographic documents. This machine uses 32 levels of error diffusion to create halftones. The method is an improvement over the previously used 16 level dither method.

(15) Copy function
The Copy function allows the machine to make a copy of a document.

(16) 32 transaction Journal
The 32 transaction Journal provides transaction information such as number of pages transmitted or received, start date and time, communication results, identification etc. It is automatically printed out every 32 transactions, or it can be printed manually at anytime.

(17) Individual Transmission Journal
The Individual Transmission Journal Print provides information on the last transmission such as number of pages transmitted, start date and time, communication results, identification etc. It can be printed out manually at anytime.

(18) Communication Journal
A communication journal is a result report of the communication. It can be printed out automatically after communication is completed. Printout condition can be selected by fax parameter to always print out, print out when communication has failed or no printout.

(19) Multi-purpose LCD Display
16 x 1 Numeric LCD Display shows date and time, remote ID number and pages transmitted or received. In case of an error, the LCD Display shows an information code to indicate the exact cause of the trouble.

(20) Fax / Tel Automatic Switch
(For some countries, this feature may not be valid because of the country's regulation.)
This feature allows you to share a single telephone line for both Fax and Voice, thus saving on the cost of installing second telephone line. When the machine answers an incoming call, it will automatically distinguish whether the caller is a Fax or not, If it is a Fax call, machine will receive the document. If it is a Voice call, the machine will beep for operator attention.

(21) TAM Interface
A TAM (Telephone Answering Machine) can be connected to this machine. If the machine is called, machine determines Fax mode or TAM mode automatically by checking a signal from the calling side informing whether it is a Fax or Operator call. If CNG signal (Calling tone, CCITT T.30) is detected, machine switches the telephone line to the fax side and starts Fax communication. If CNG signal is not detected, the machine stays in TAM mode.

(22) Remote Diagnostic Function
The Remote Diagnostic Function enables diagnosis of the unit remotely over the PSTN or equivalent. A new host system is required for high speed remote diagnostic to be available.

1.3 General Specifications

(1) **Communication Facility**
Public Switched Telephone Network (PSTN)

(2) **Line Coupling**
Direct Coupling

(3) **Input Level**
-5 to -43dbm

(4) **Output Level**
0 to -15dbm

(5) **Control Procedure**
CCITT Rec. T.30
MGCS Proprietary short protocol

(6) **Modem Speed**
9600 bps/7200 bps (CCITT Rec. V.29)
4800 bps/2400 bps (CCITT Rec. V.27ter)

(7) **Coding Scheme**
MH (Modified Huffman)
MR (Modified Read)
MMR (Modified Modified Read)

(8) **Communication Resolution**
<CCITT Mode>

	Horizontal	Vertical
Standard	8 pels/mm	3.85 lines/mm
Fine	8 pels/mm	7.70 lines/mm

<300dpi Mode>

	Horizontal	Vertical
Standard	300 dpi	100 dpi
Fine	300 dpi	200 dpi
300dpi	300 dpi	300 dpi

The 300 dpi mode is available in receive mode only.

(9) **Halftone**
32 Levels, Error Diffusion

(10) **Error Correction Mode**
CCITT Rec. T.30 ECM (MMR)

(11) **Image Memory Capacity**
12 pages (Using CCITT Test Chart No.1 in standard resolution)

(12) **Transmission Speed**
12 Seconds
(Using CCITT Test Chart No.1 in Standard Resolution, memory to memory communication)

(13) Automatic Dialing

Dialing Signal:	10PPS/DTMF
Dialing Method	
One-Touch Dialing:	Up to 16 keys
Abbreviated Dialing:	Up to 50 stations (Including 16 One-Touch Dialing) <For U.K. version> Up to 49 stations (Including 15 One-Touch Dialing)
Direct Dialing:	Up to 3 stations (On-hook dial mode) (Up to 36 digits including pause and space)
Combination Dialing:	Combination of One-Touch, Abbreviated and Direct Dialing (On-hook dial mode)
Multi-Station Dialing:	Multi-Station Transmission Up to 53 stations (50 Abbreviated and 3 Direct Dialing) <For U.K. version> Up to 52 stations (49 Abbreviated and 3 Direct Dialing) Deferred Multi-Station Transmission Up to 50 stations (50 Abbreviated Dialing) <For U.K. version> Up to 49 stations (49 Abbreviated Dialing)

Registration Memory Capacity in One-Touch and Abbreviated Dialing

Number of Stations:	Up to 50 stations <For U.K. version> Up to 49 stations
Telephone number of each station:	Up to 36 digits (Including pause and space)
Station name for each station:	Up to 15 characters
Redialing	
Automatic:	Up to 15 times with 1 to 15 minute intervals
Manual:	By pressing the Redial button (latest dialed)

(14) Print Reduction Ratio

Fixed Reduction Mode:	70 to 100% in 1% steps
Automatic Reduction Mode:	70 to 100% in 1% steps (according to the received document length)

(15) Mercury Key (for U.K. version only)

ABBR. No. 50 has been reserved for Mercury Key.
(Up to 36 digits including pause and space.)

1.4 Scanner Specifications

(1) **Document Dimensions**

Width:	Minimum 148 mm Maximum 216 mm
Length:	Minimum 128 mm Maximum 356 mm

Note: With operator's assistance, maximum of 2000 mm length document can be sent (one page at a time)

(2) **Automatic Document Feeder**

Automatic Document Feeder feeds the documents from the document tray automatically starting with the bottom page.

Paper thickness:	Single-page: 0.06mm to 0.15mm Multi-page: 0.06mm to 0.12mm
Capacity:	20 sheets {Average thickness, 0.06mm to 0.12mm and same size}

(3) **Scanning Method**

Horizontal: Flat-bed scanning by CCD image sensor
Vertical: Stepper Motor feeding

(4) **Effective Scanning Width**

208mm

(5) **Scanning Resolution**

Standard:	8 pels/mm × 3.85 lines/mm
Fine:	8 pels/mm × 7.7 lines/mm

(6) **Manual Original Contrast Selection**

2 steps (Normal / Light)

1.5 Printer Specifications

Refer to Chapter 1 of Supplement Service Manual for GPM (Order No. MGCS920420S2).

1.6 Power

(1) **Power Requirement**
100V Area: 108~132 VAC, 47~63 Hz, Single Phase
200V Area: 180~264 VAC, 47~63 Hz, Single Phase

(2) **Power Consumption**

At copy:	Approx. 34W
At Transmission:	Approx. 25W
At Reception:	Approx. 23W
At Standby:	Approx. 13W

1.7 Environment

(1) **Operating Environment**

Temperature:	41 to 95 °F (5 to 35 °C)
Relative Humidity:	20 to 70 %RH
Tilt:	Even Level

(2) **Storage Environment (Carton Condition)**

Temperature:	15 to 131 °F (-10 to 55 °C)
Relative Humidity:	5 to 80% RH

Note: Machine should be stored upright.

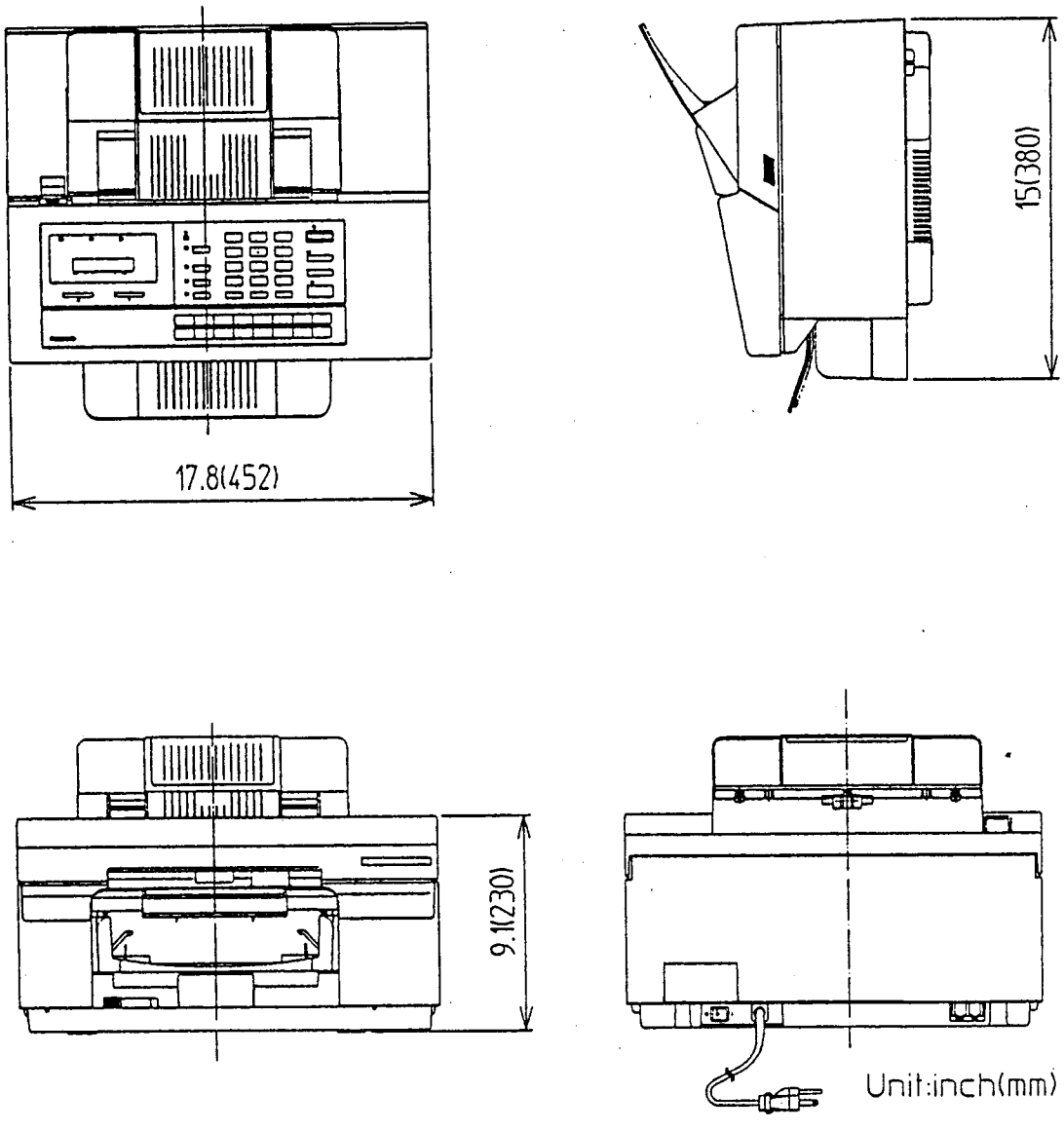
(3) **Transportation Environment (Max. 480 hours, Carton Condition)**

Temperature:	-22 to 140 °F (-30 to 60 °C)
Relative Humidity:	5 to 80 %RH

1.8 Construction

Dimensions (W x D x H)	452mm x 380mm x 230mm
Weight (excluding paper)	Approx. 11 Kg
External View	Refer to Appendix 1

Appendix 1 - External View



1.9 Function Table

	Items	UF-300	UF-311
	(Main Specifications)		
	G3 Compatibility	Yes	←
	G2 Compatibility	No	←
	Modem Speed (kbps)	9.6 / 7.2 / 4.8 / 2.4	←
	Coding Scheme	MH / MR / MMR	←
	CCITT ECM	Yes	←
	Short Protocol	Yes	←
	Transmission Speed (CCITT No.1)	Approx. 12 Sec.	←
☆	Communication Resolution	〈 CCITT mode 〉 8 × 3.85 8 × 7.70 〈 300dpi mode 〉 300 × 100 300 × 200 300 × 300	〈 CCITT mode 〉 8 × 3.85 8 × 7.70 〈 300dpi mode 〉 *1 300 × 100*1 300 × 200*1 300 × 300*1
	(TX Mechanism)		
	ADF	Yes(20 sheets)	←
	Document Width	216mm	←
	Scanning Width	208mm	←
☆	Scanning Device	CIS	CCD
☆	Scanning Resolution	300dpi × 100dpi 300dpi × 200dpi 300dpi × 300dpi	8 × 3.85 8 × 7.70
	(RX Mechanism)		
	Recording Method	Thermal Ink Jet	←
	Recording Paper	Plain	←
	Recording Paper Size	A4 / Letter / Legal	←
	Recording Paper Capacity	Approx. 100 sheets	←
	Recording Resolution	300dpi × 300dpi	←
	(Document Memory)		
	Document Memory Capacity	12 pages (256KB)	←
	Additional Document Memory	512KB / 1MB/2MB (Dealer Option)	←
☆	Document Memory Back up	Up to 24 Hours	No
	(Copy Quality)		
	ABC	Yes	←
☆	Original Contrast Selection	Yes (3 levels)	Yes (2 levels)
☆	Halftone	Yes (16 levels, Dither Coded)	Yes (32 levels, Error Diffusion)
☆	300 dpi mode	300 × 100 300 × 200 300 × 300	300 × 100*1 300 × 200*1 300 × 300*1

*1: The 300 dpi mode is available in receiving mode only.
☆: Indicates items that are different.

	Items	UF-300	UF-311
	(Dialing Features)		
☆	One-Touch Dial Keys	24 + (4)	16
☆	Program Dial Keys	4	No
☆	Flash Key	No	Yes
☆	Abbr. Dialing	100 36 digits 15 Characters	50 (49 for U.K.) 36 digits 15 Characters
☆	Alternative Abbr. Dialing	Yes	No
☆	Direct Dialing	Yes (12 Stations)	Yes (3 Stations)
	Redialing	Yes	←
	(Transmission Features)		
	Memory Transmission	Yes	←
☆	Multi-Station Transmission	Yes(112 Stations)	Yes(53 Stations) (52 Stations for U.K.)
☆	Multifile Transmission	Yes (8 Files)	No
☆	Deferred Transmission	Yes(2 Timers)	Yes(1 Timer)
☆	Deferred Multi-Station Transmission	Yes(2 Timers / 100 stations)	Yes(1 Timer / 50 (49) stations)
☆	ECM-TX On/Off Selection	Yes	No
☆	XMT Reserve (ADF standby)	Yes	No
	(Reception Features)		
	Substitute Reception	Yes	←
	Fixed Reduction (70 - 100%)	Yes	←
	Auto Reduction (70 - 100%)	Yes	←
	Fax/Tel Auto Switch	Yes	←
☆	TAM Interface	No	Yes
	(Polling Features)		
	Polling	Yes	←
☆	Turnaround Polling	Yes	No
☆	Multi-Station Polling	Yes(112 Stations)	No
☆	Deferred Polling	Yes(2 Timers)	No
☆	Deferred Multi-Station Polling	Yes(2 Timers)	No
☆	Polling TX	Yes	No
☆	Memory Polling TX	Yes	No
	Polling Password	Yes	←

☆: Indicates items that are different.

	Items	UF-300	UF-311
	(Copy Functions)		
	Single Copy	Yes	←
☆	Multiple Copy	Yes	No
	(Certainty)		
☆	Verification Stamp	Yes	No
	Header Print	Yes(25Chara)	←
	Total Page Print	Yes	←
☆	Communication Journal	Yes (Off / On/ Inc)	Yes (Off / On/ Inc) (Fax Para only)
	32-transaction Journal	Yes	←
	Last Individual Transmission Journal	Yes	←
	(List Printouts)		
	One-Touch/Abbr. No. List	Yes	←
☆	Program List	Yes	No
	Fax Parameter List	Yes	←
☆	Character Code List	No	Yes
	(Identifications)		
	Logo	25 Characters	←
☆	Characters ID	16 Characters	No
	Numeric ID	20 digits	←
	(Special Comm.)		
☆	Password Transmission	Yes	No
☆	Password Reception	Yes	No
☆	Relay Transmission Request	Yes	No
☆	Confidential Transmission	Yes	No
☆	Confidential Polling	Yes	No
	(Others)		
☆	Fax Access Code	Yes	No
☆	Panel Display	35 Segments LCD 20 x 2, Alpha	7 Segments LCD 16 x 1, Numeric
☆	Logo Input Method	Character Keys	Character Codes
	Operator Call Function	Yes	←
	Remote Diagnostic Function	Yes	←
	(Construction)		
☆	Telephone Handset	Yes	No
☆	Dimensions (W x D x H) (mm)	528 x 380 x 230	452 x 380 x 230
	Weight	Approx. 11 Kg	Approx. 11kg

☆: Indicates items that are different.

Chapter 2
Disassembly Instructions

2.1 General Disassembly Flowchart 2-2
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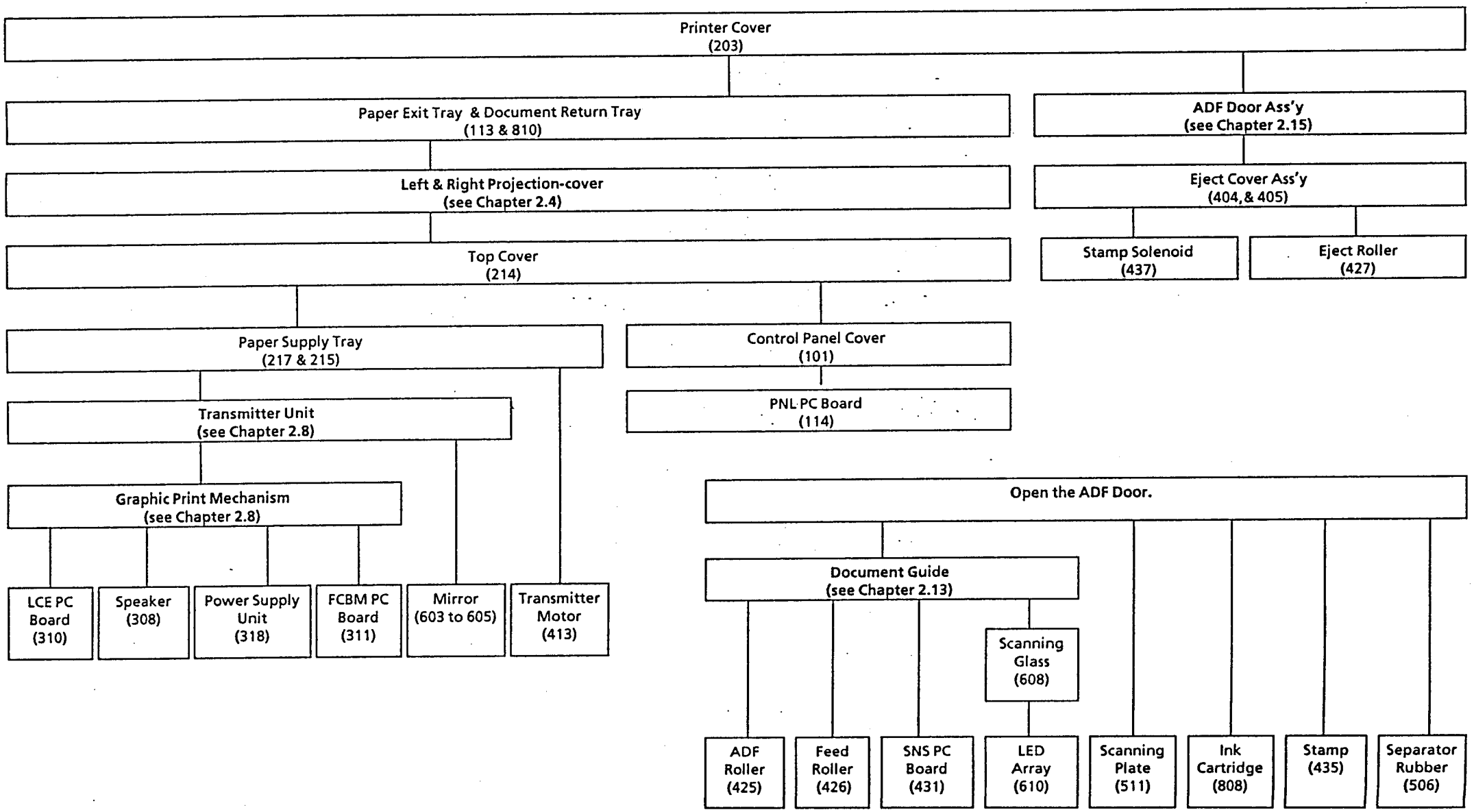
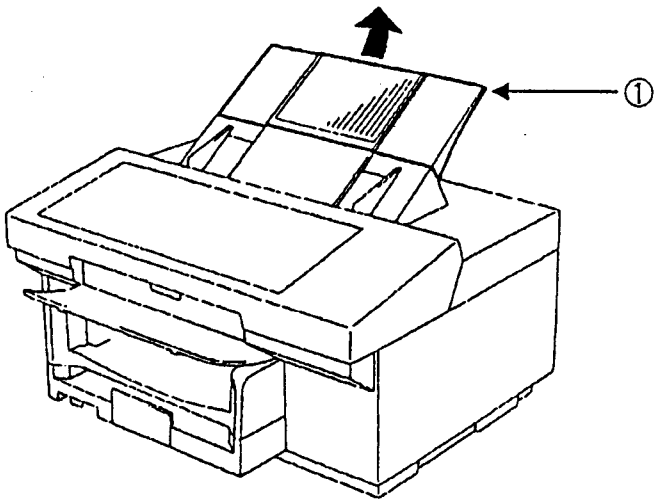
2.23 Stamp (435) (UF-312) 2-29

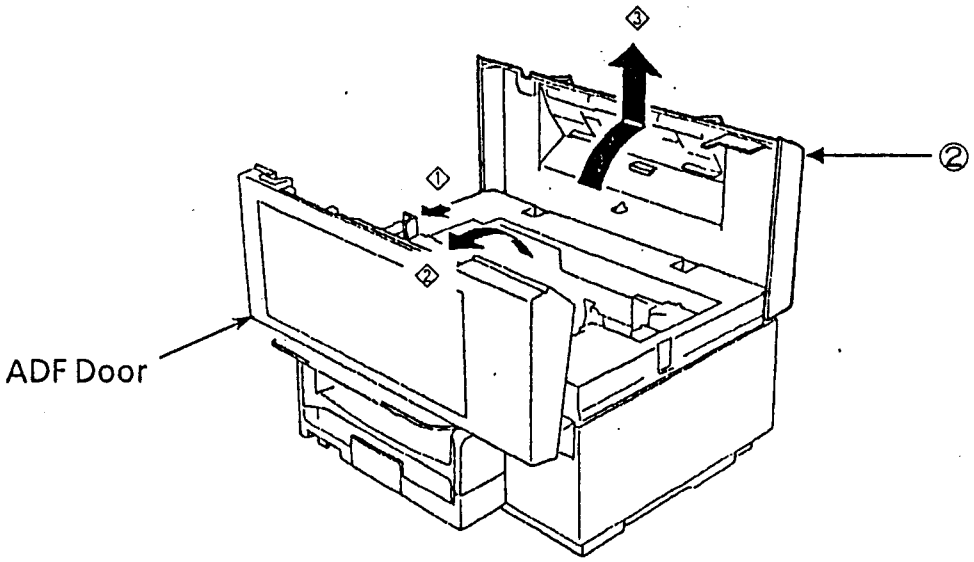
2.1 General Disassembly Flowchart



2.2 Printer Cover (203)

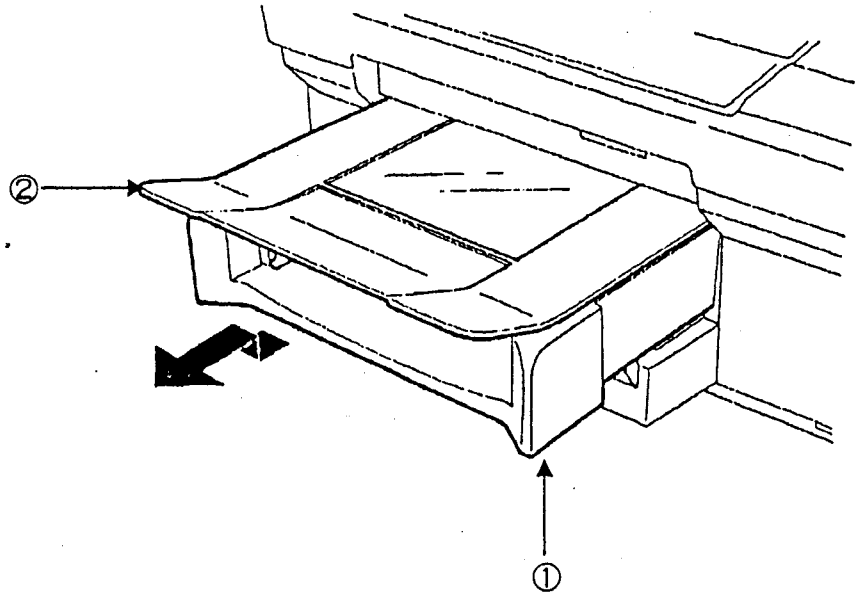
Step	Figure	Disassembly Procedure/Parts to be removed
1	①	Document Sub-Tray (809)
2		Open the ADF Door.
3	②	Printer Cover (203)





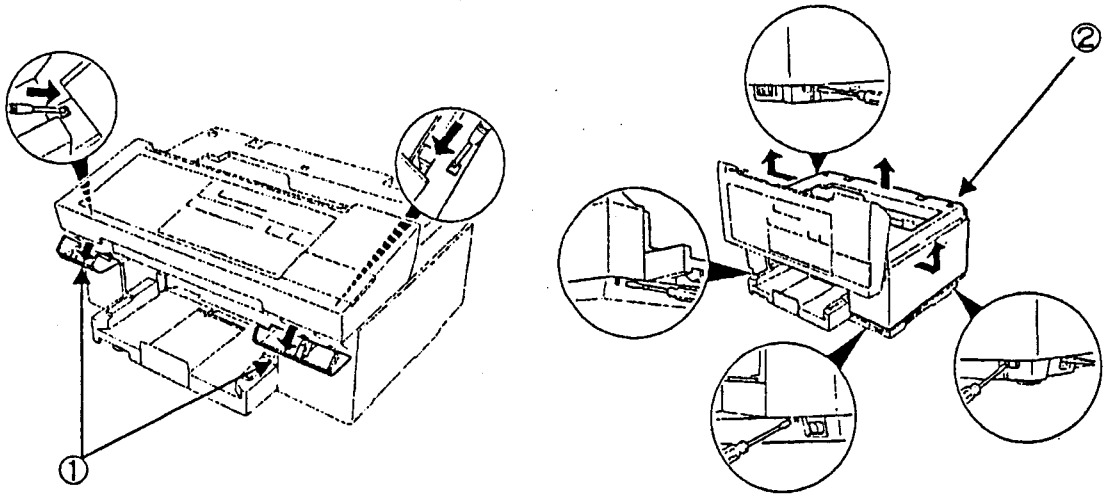
2.3 Paper Exit Tray (113) & Document Return Tray (810)

Step	Figure	Disassembly Procedure/Parts to be removed
1	①	Paper Exit Tray (113)
	②	Document Return Tray (810)

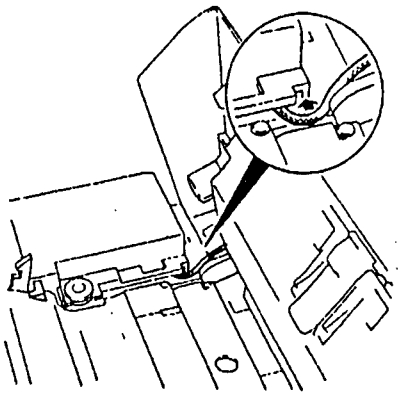


2.4 Top Cover (214)

Step	Figure	Disassembly Procedure/Parts to be removed
1		Remove the Printer Cover (see Chapter 2.2). Remove the Paper Exit Tray & Document Return Tray (see Chapter 2.3). Open the ADF Door.
2	①	Right & Left Projection-Cover (211 & 210)
3		Remove Handset and Handset Cradle (Note 4)
4	②	Top Cover (202) (Note 1, 2 and 3)



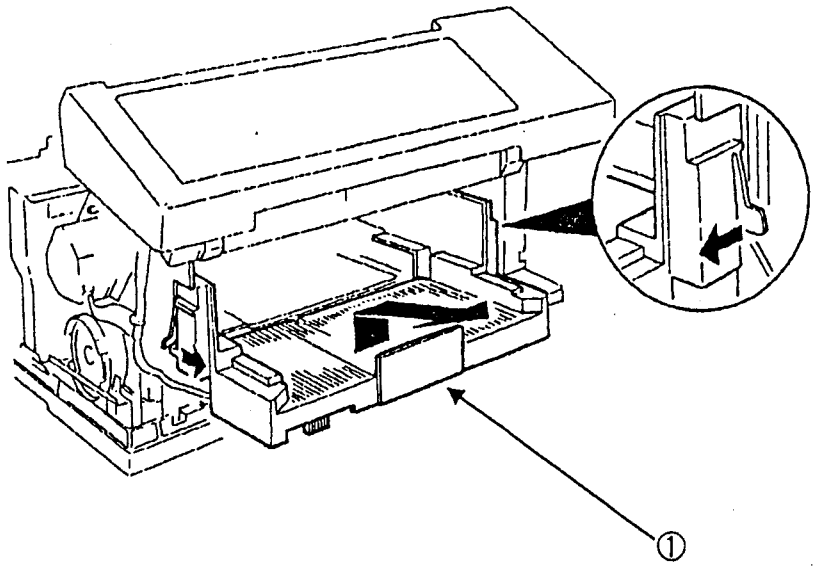
Note 1: Top Cover is fixed by four "flukes" between Top Cover and Base Cover as shown.
Note 2: Be careful with the Printer Cover Sensor actuator when removing the Top Cover.



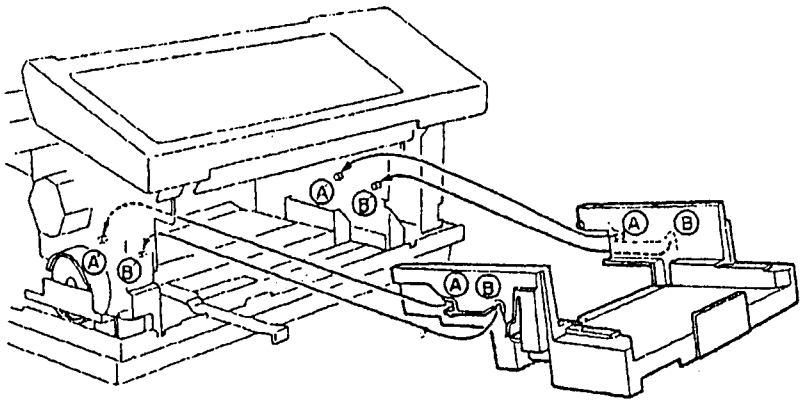
Note 3: When reinstalling the Top Cover, make sure that the grounding wire of right side from the control panel is passed into the notch of the Top Cover.
Note 4: Not available for UF-311.

2.5 Paper Supply Tray (217 & 215)

Step	Figure	Disassembly Procedure/Parts to be removed
1		Remove the Top Cover (see Chapter 2.4)
2	①	Paper Supply Tray (217 & 215)

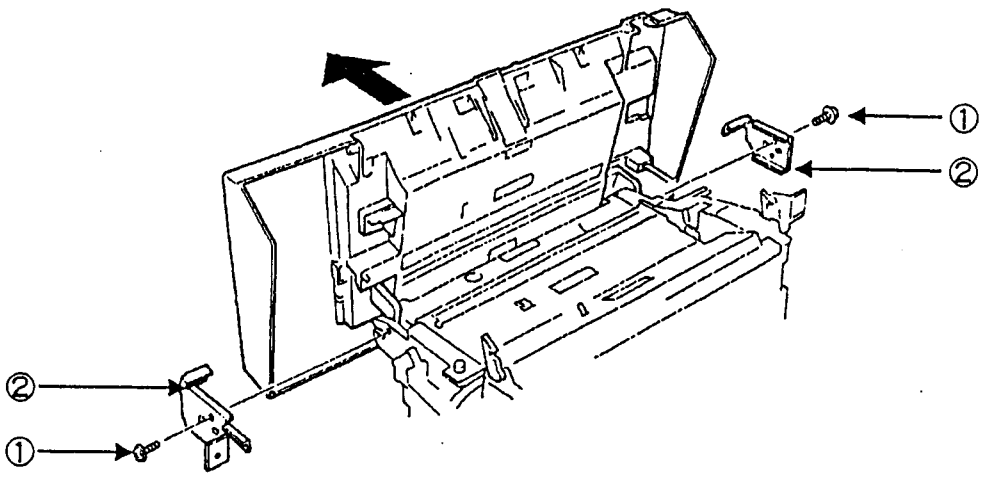


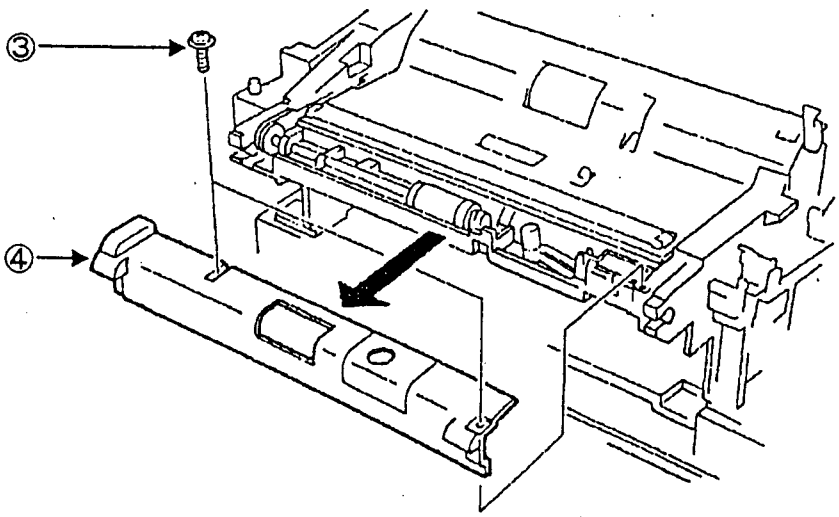
Note: When reinstalling the Paper Supply Tray, make sure that the two notches (Ⓐ and Ⓑ) on both sides of the Paper Supply Tray are fitted into the projections (Ⓐ' and Ⓑ') on both sides of the frame.



2.6 Eject Cover Ass'y (404 & 405)

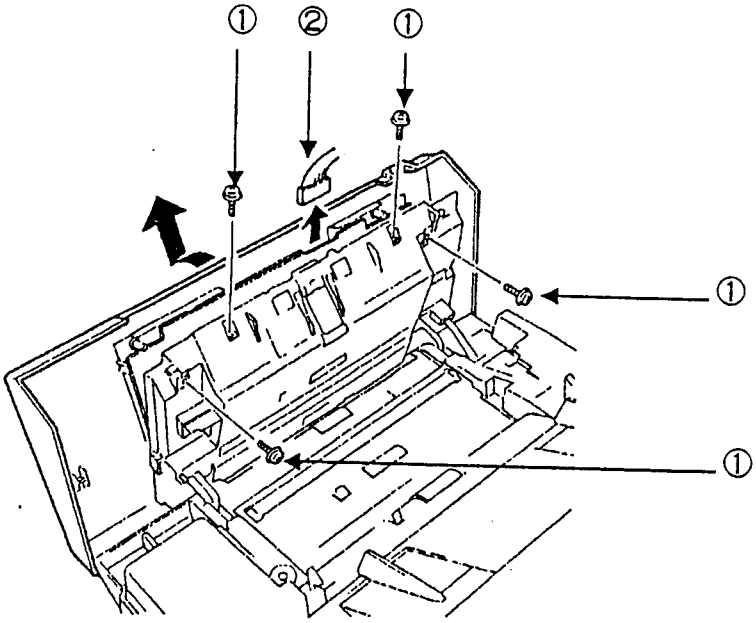
Step	Figure	Disassembly Procedure/Parts to be removed
1		Remove the Top Cover (see Chapter 2.4).
2	①	Two screws (2D)
3	②	Right and Left TX Chassis Bracket (403 & 406)
4		Remove ADF Door Ass'y.
5	③	Two screws (2D)
6	④	Eject Cover Ass'y (404 & 405)

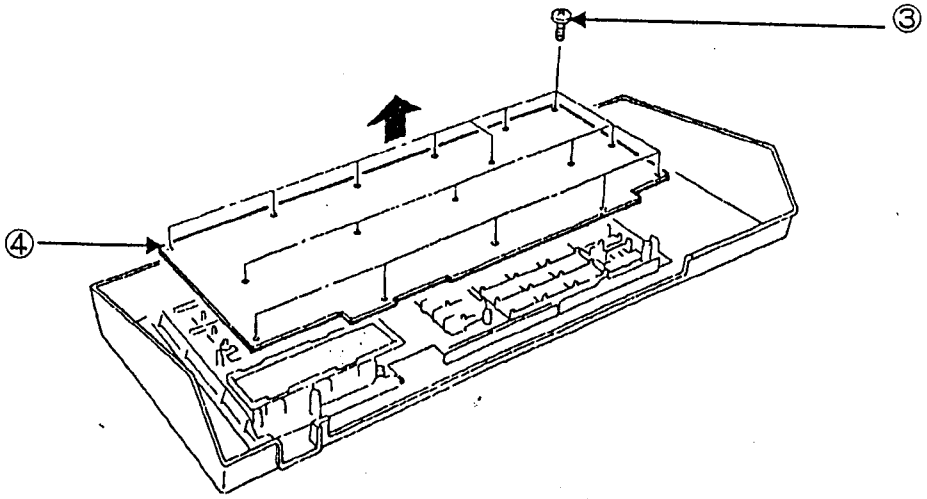




2.7 Control Panel Cover (101) & PNL PC Board (114)

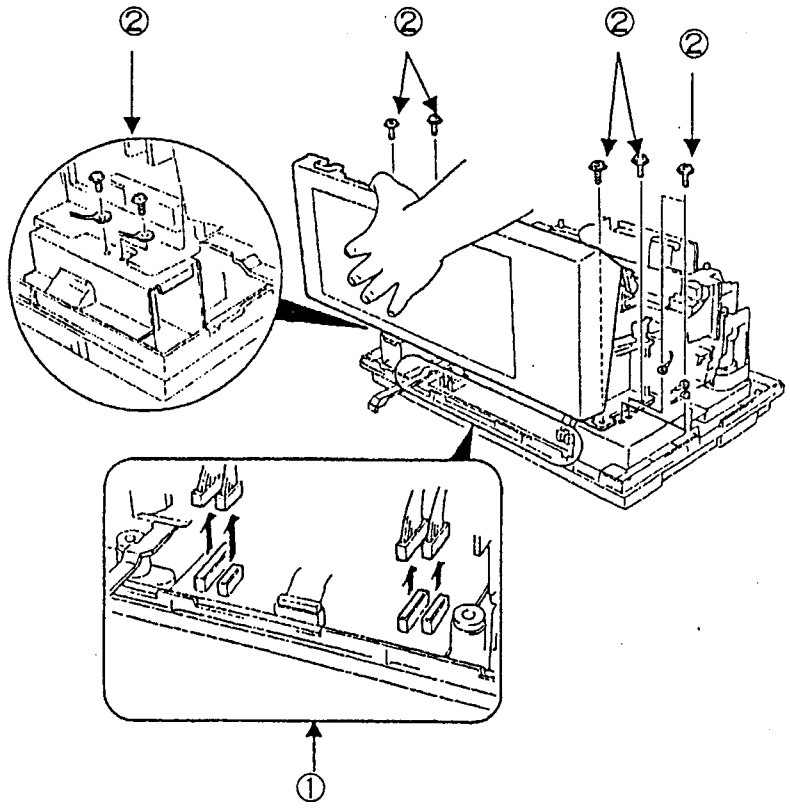
Step	Figure	Disassembly Procedure/Parts to be removed
1		Open the ADF Door.
2	①	Four screws (21 & 2D)
3	②	One Connector
4	③	All screws (5S) on the PNL PC Board
	④	PNL PC Board (114)



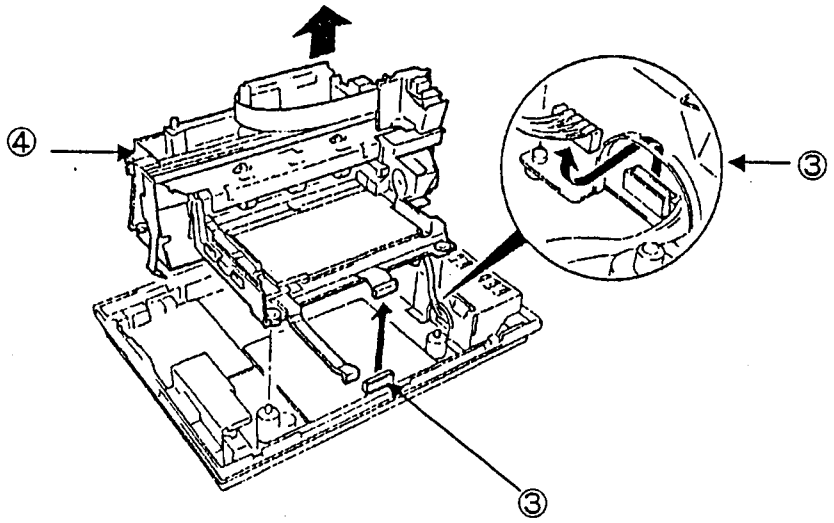


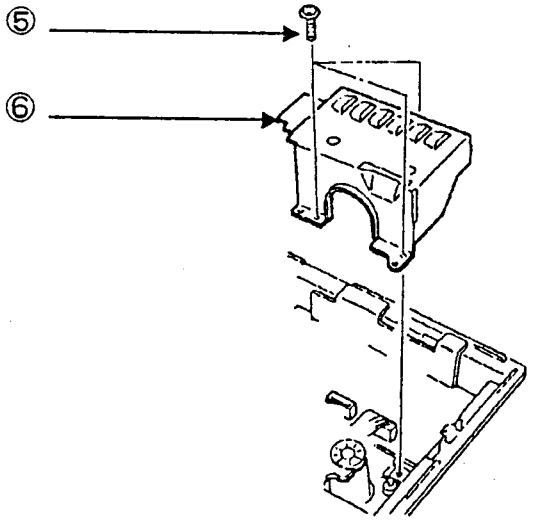
2.8 Power Supply Unit (316)

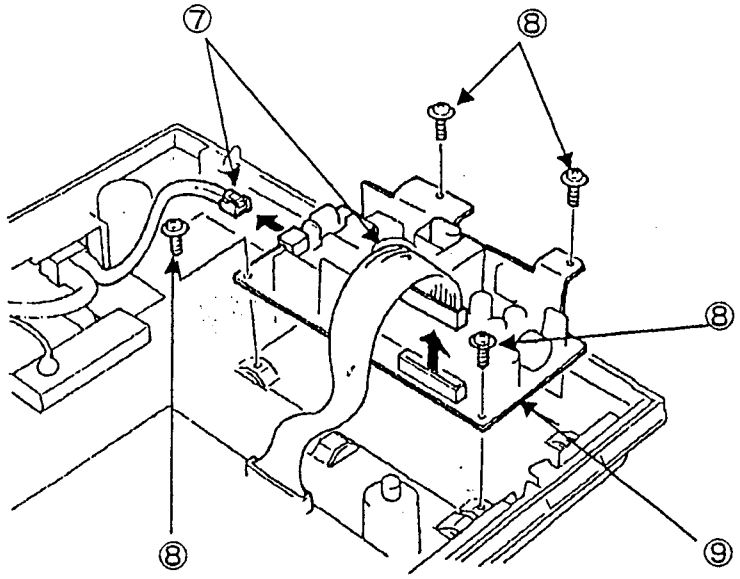
Step	Figure	Disassembly Procedure/Parts to be removed
1		Remove the Top Cover and Paper Supply Tray (see chapter 2.4 and 2.5).
2	①	Four Connectors (CN5, 4, 7 and 8)
	②	Eight Screws (2D and 21)
		Remove the Transmitter Unit.
3	③	Two Connectors (CN6 and 2P)
	④	GPM
4	⑤	Three Screws (21)
	⑥	PSU Cover (313)
5	⑦	Two Connectors (CN1P and 3P)
	⑧	Four Screws (21)
	⑨	Power Supply Unit (316)



2.8 Power Supply Unit (316)

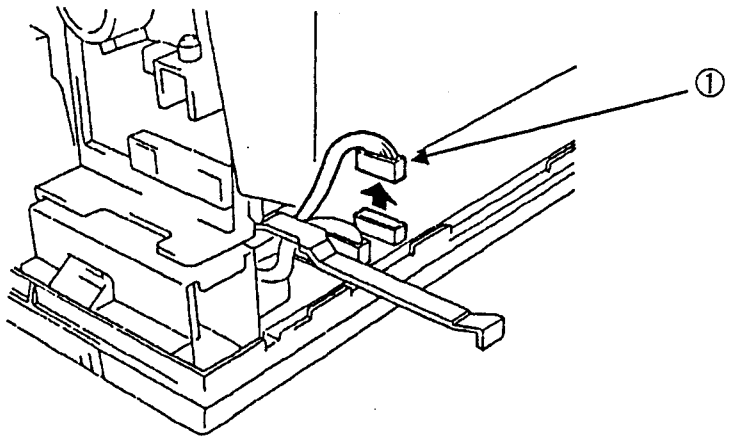


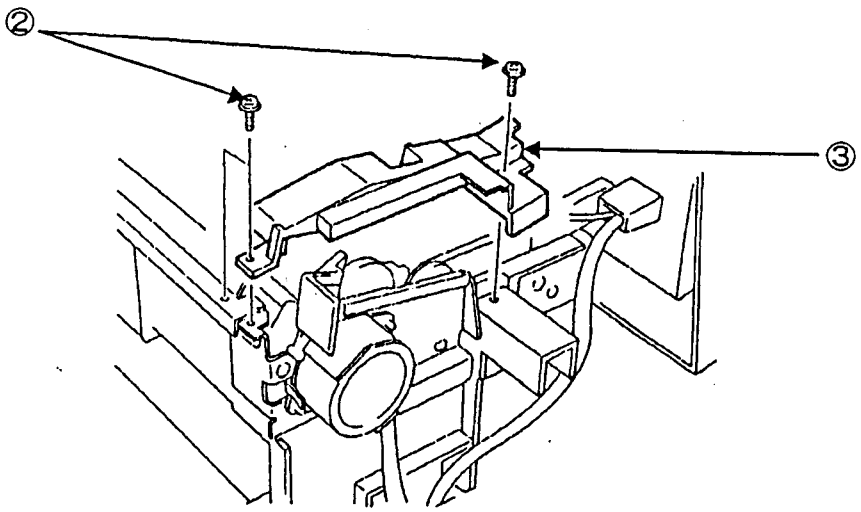




2.9 Transmitter Motor (413)

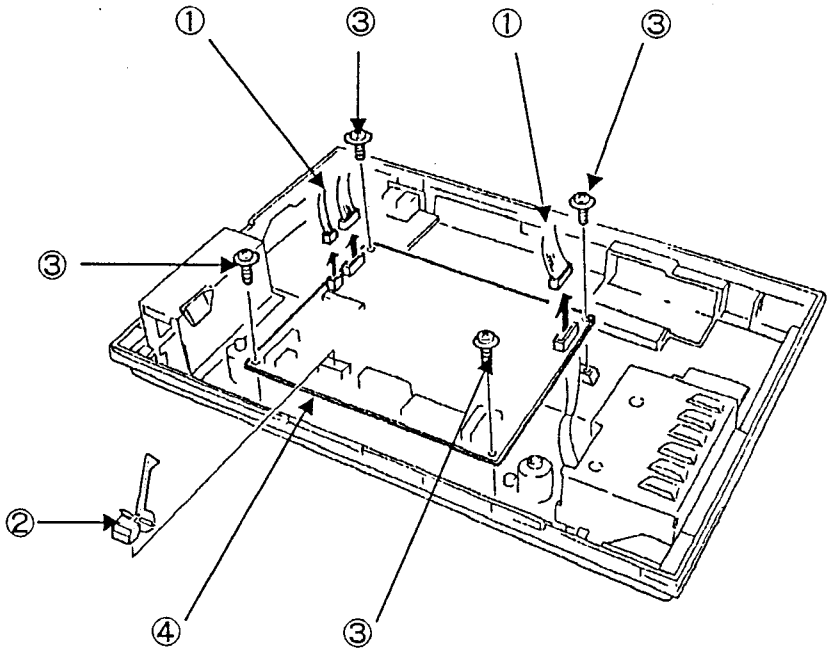
Step	Figure	Disassembly Procedure/Parts to be removed
1		Remove the Top Cover (see Chapter 2.4).
2		Remove the Paper Supply Tray (see Chapter 2.5).
3	①	One Connector (CN4)
4	②	Three Screws (2D)
	③	Gear Cover (414)
5	④	Latch Spring (428)
	⑤	Three Screws (2D & 21)
	⑥	Three Gears (408, 409 and 410)
	⑦	Two Screws (2D)
	⑧	Transmitter Motor (413)





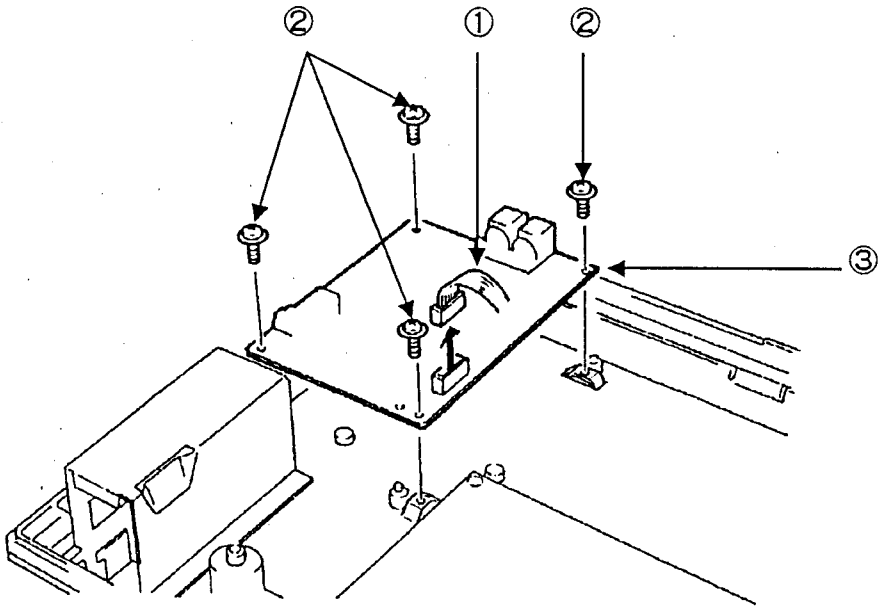
2.10 FCBM PC Board (311)

Step	Figure	Disassembly Procedure/Parts to be removed
1		Remove GPM (see Chapter 2.8)
2	①	Three Connectors (CN1, 2 and 3)
	②	No Paper Actuator (326)
	③	Four Screws (21)
	④	FCBM PC Board (311)



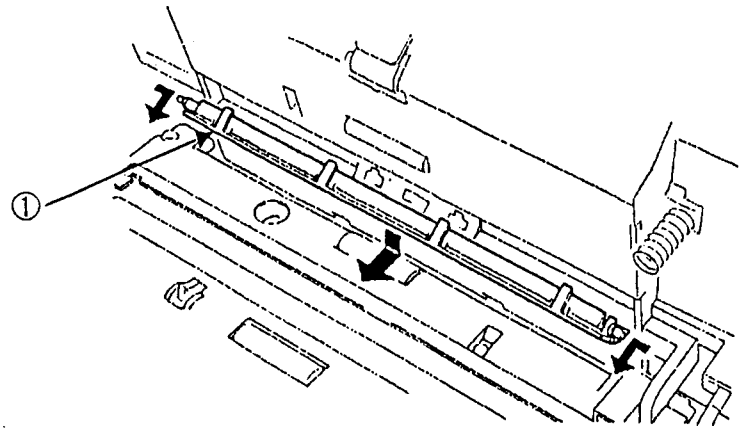
2.11 LCE PC Board (310)

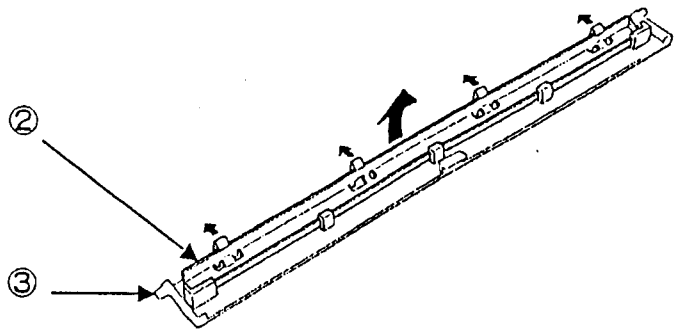
Step	Figure	Disassembly Procedure/Parts to be removed
1		Remove GPM (see Chapter 2.8).
2	①	One Connector
	②	Four Screws (21)
	③	LCE PC Board (310)



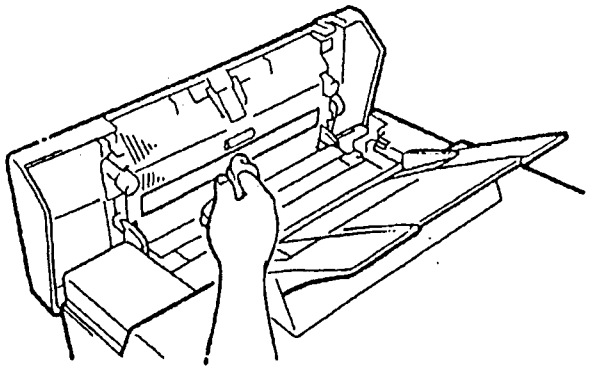
2.12 Scanning Plate (511)

Step	Figure	Disassembly Procedure/Parts to be removed
1		Open the ADF Door.
2	①	Scanning Plate Ass'y
3	②	Scanning Plate Bracket (510)
	③	Scanning Plate (511)



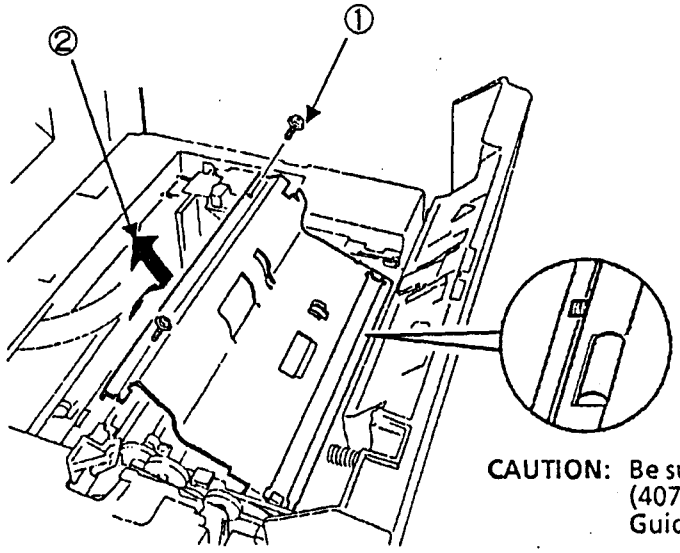


Cleaning: 1. Open the ADF Door.
2. Clean with a soft cloth soaked with ethyl alcohol.

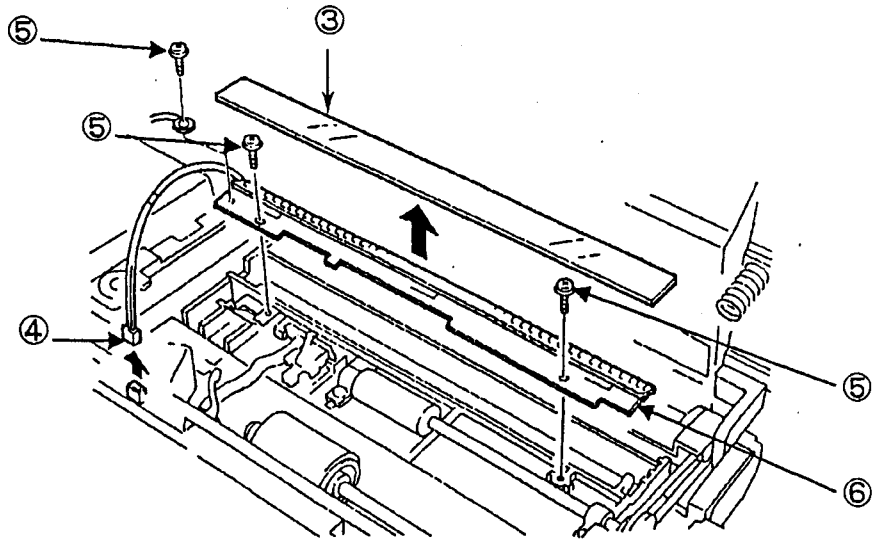


2.13 Scanning Glass (608) and LED Array (610)

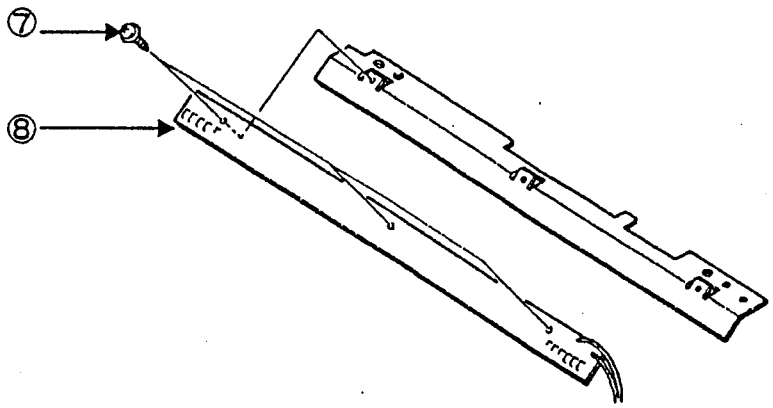
Step	Figure	Disassembly Procedure/Parts to be removed
1		Open the ADF Door.
2	①	Two Screws (2D)
	②	Document Guide (430)
3	③	Scanning Glass (608)
4	④	One Connector (CN14)
	⑤	Three Screws (2D & 21)
	⑥	LED Array (610) and LED Bracket (609)
5	⑦	Three Screws (7B)
	⑧	LED Array (610)



CAUTION: Be sure the Grounding Plate 1 (407) is under the Document Guide.

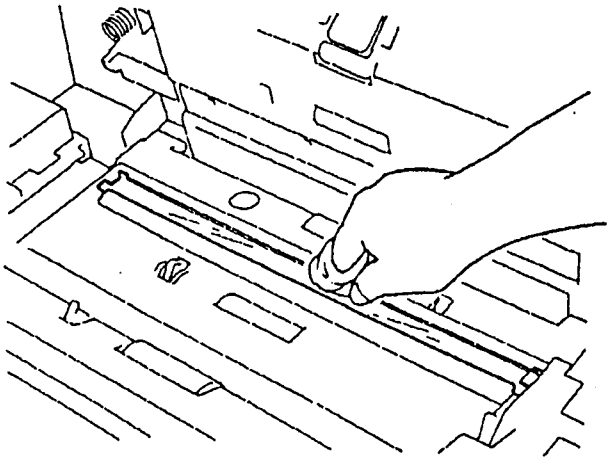


2.13 Scanning Glass (608) and LED Array (610)



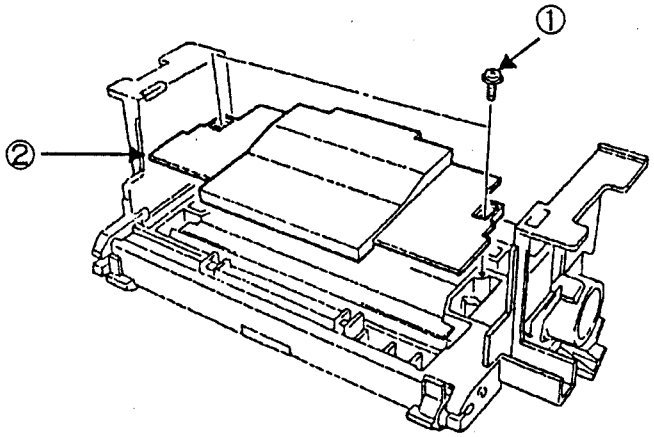
Cleaning: 1. Open the ADF Door.

2. Clean the Scanning Glass with a soft cloth soaked with ethyl alcohol.

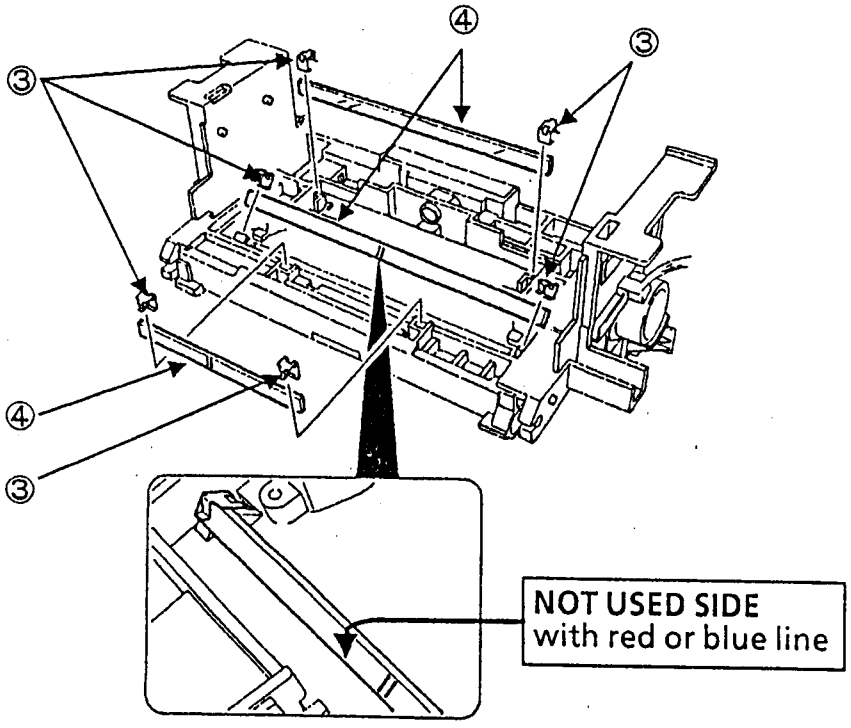


2.14 Mirrors (603, 604 and 605)

Step	Figure	Disassembly Procedure/Parts to be removed
1		Remove the Transmitter Unit (see Chapter 2.8).
2	①	Two Screws (2D)
	②	Mirror Cover (607) (**Note 1**)
3	③	Six Mirror Plate Spring (606) (**Note 3**)
	④	Mirrors (603, 604 and 605) (**Note 2**)



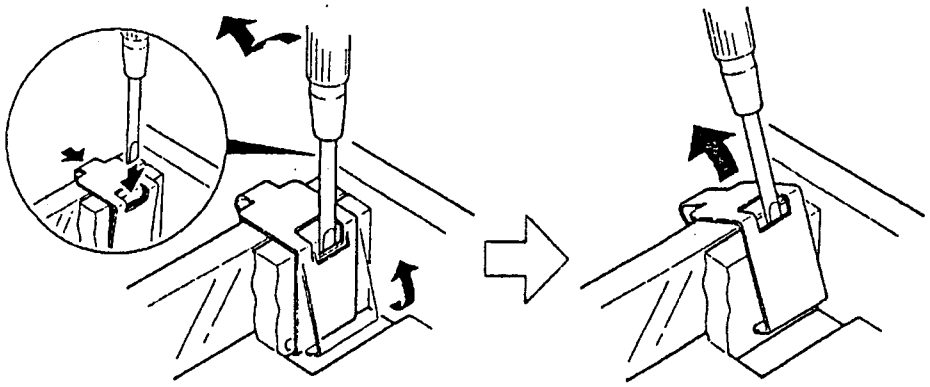
Note 1: Before reinstalling the mirror cover, clean the dust off the cover.



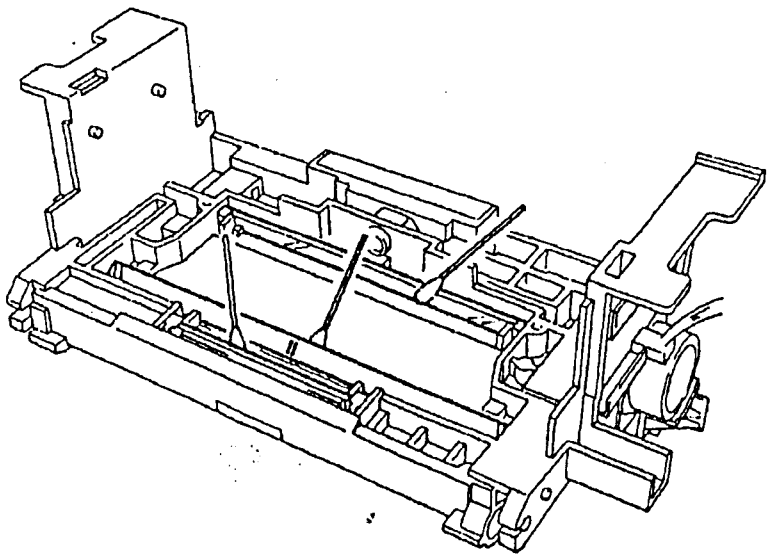
Note 2: Be careful not to mistake the USED SIDE and NOT USED SIDE of the mirrors.
The NOT USED SIDE is marked by a red or blue line on the mirror.

2.14 Mirrors (603, 604 and 605)

Note 3: When removing the mirror plate springs, use a small blade-tip screwdriver as shown below.
Be sure not to deform the mirror plate springs while handling them.

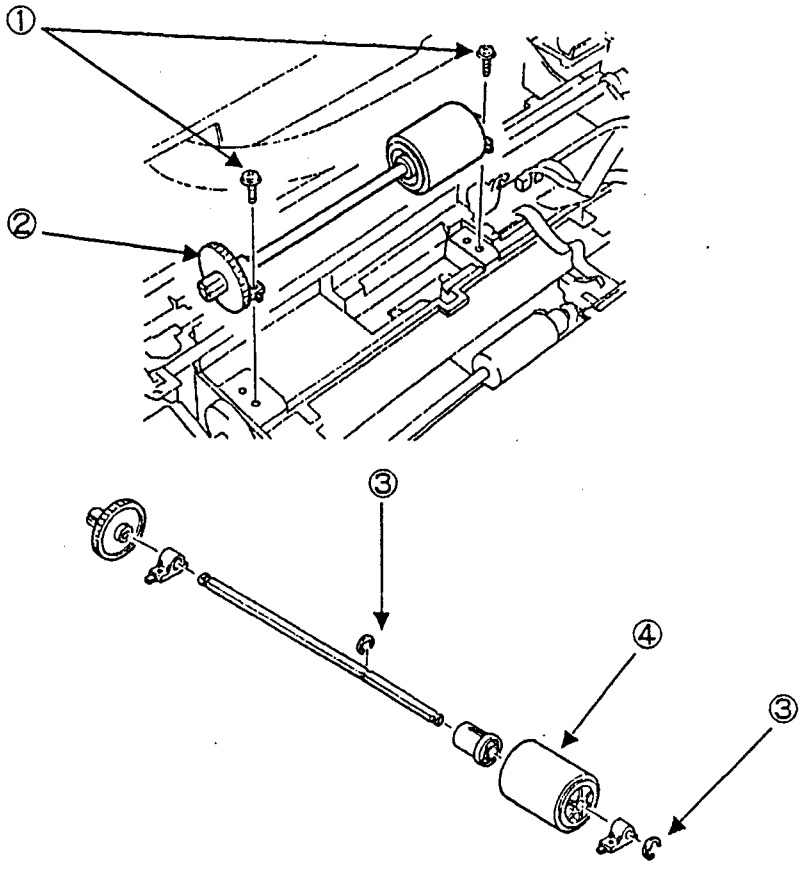


Cleaning : 1. Remove the Mirror Cover.
2. Clean with a cotton swab soaked with ethyl alcohol.

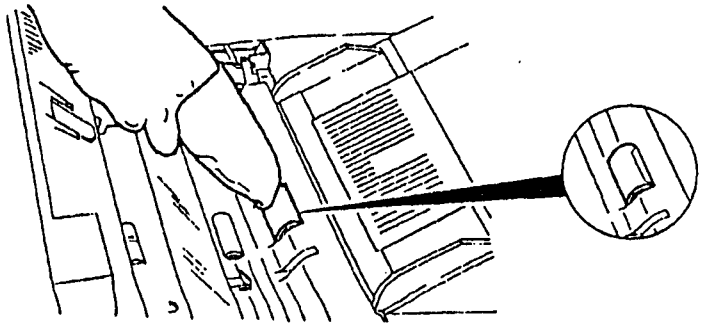


2.15 ADF Roller (425)

Step	Figure	Disassembly Procedure/Parts to be removed
1		Remove the Document Guide (see Chapter 2.13).
2	①	Two Screws (2D)
	②	ADF Roller Ass'y
3	③	Two E-Type Retainers (5Y)
	④	ADF Roller (425)

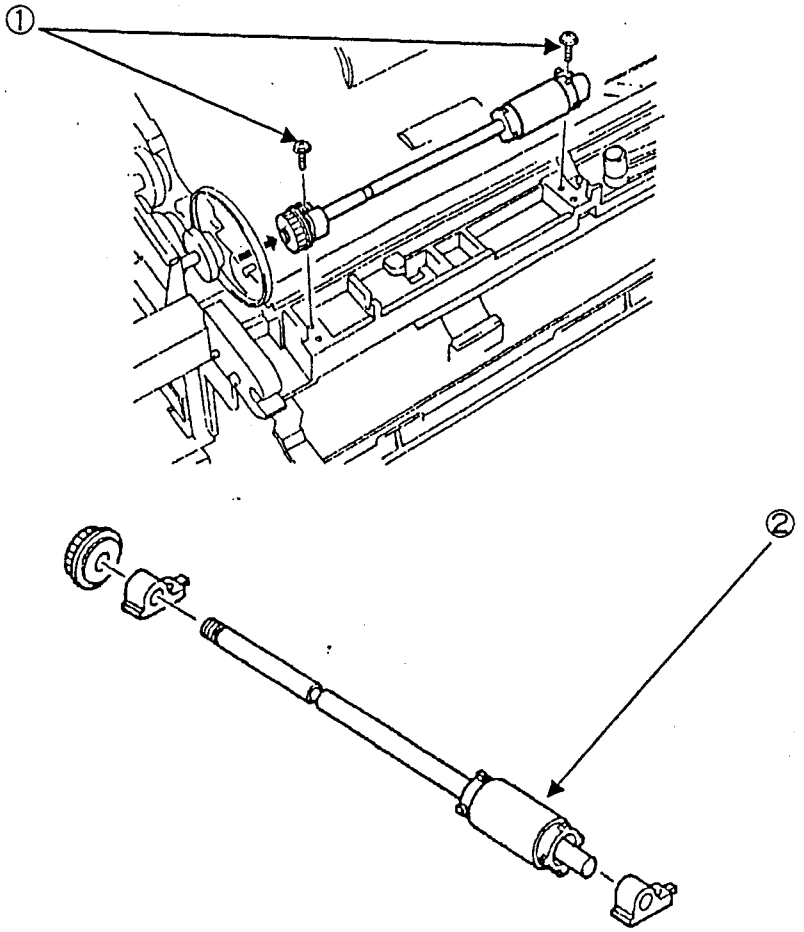


Cleaning :
1. Open the ADF Door.
2. Clean with a soft cloth soaked with ethyl alcohol.
3. Be careful not to damage the Pre-feed Film (438).

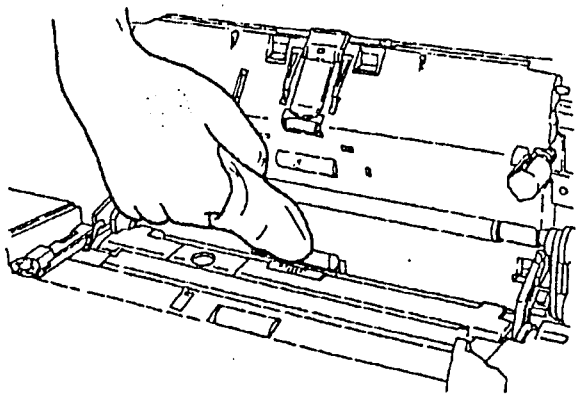


2.16 Eject Roller (427)

Step	Figure	Disassembly Procedure/Parts to be removed
1		Remove the Eject Cover Ass'y (see Chapter 2.6).
2	①	Two Screws (2D)
	②	Eject Roller (427)

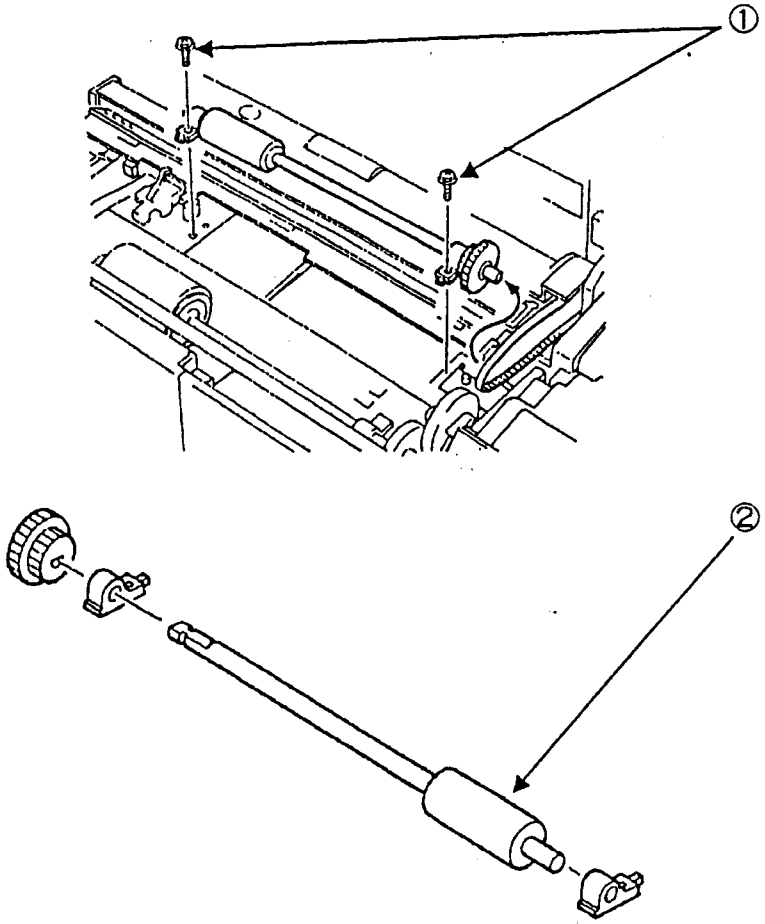


Cleaning : 1. Open the ADF Door.
2. Clean with a soft cloth soaked with ethyl alcohol.

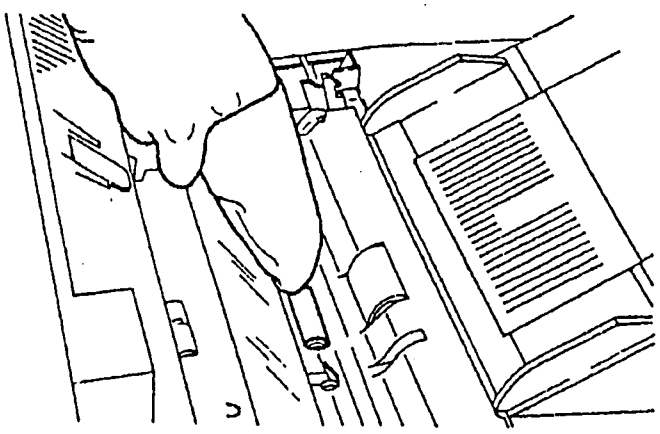


2.17 Feed Roller (426)

Step	Figure	Disassembly Procedure/Parts to be removed
1		Remove the Document Guide (see Chapter 2.13).
2	①	Two Screws (2D)
	②	Feed Roller (426),

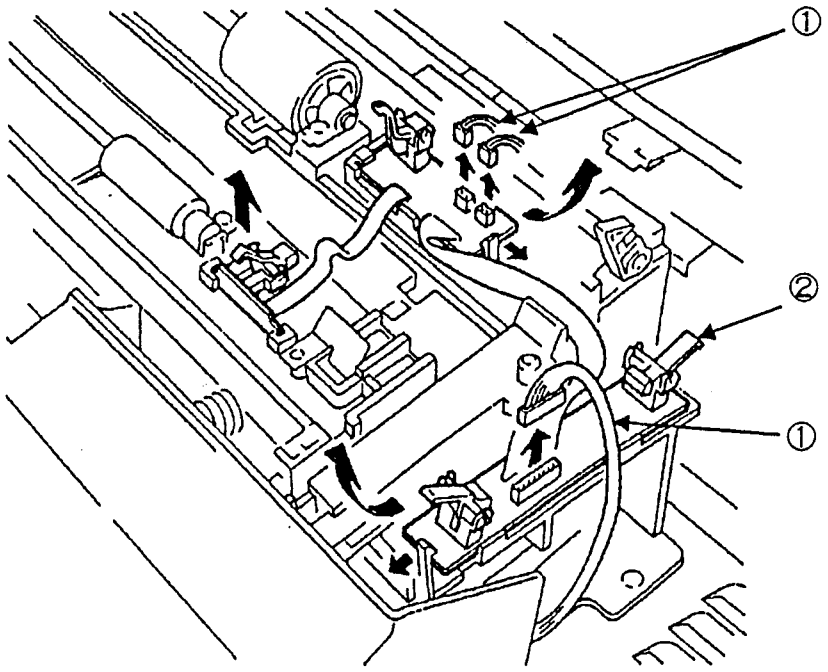


Cleaning : 1. Open the ADF Door.
2. Clean with a soft cloth soaked with ethyl alcohol.



2.18 SNS PC Board (431)

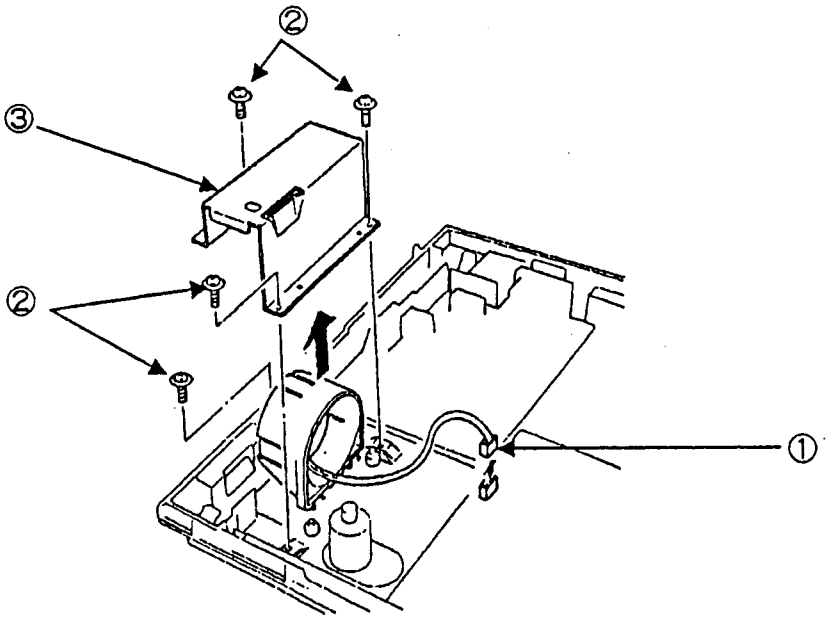
Step	Figure	Disassembly Procedure/Parts to be removed
1		Remove the Top Cover and Document Guide (see Chapter 2.4 and 2.13).
2	①	Three Connectors (CN13, 14 and 15) (See Note.)
	②	SNS PC Board (431)

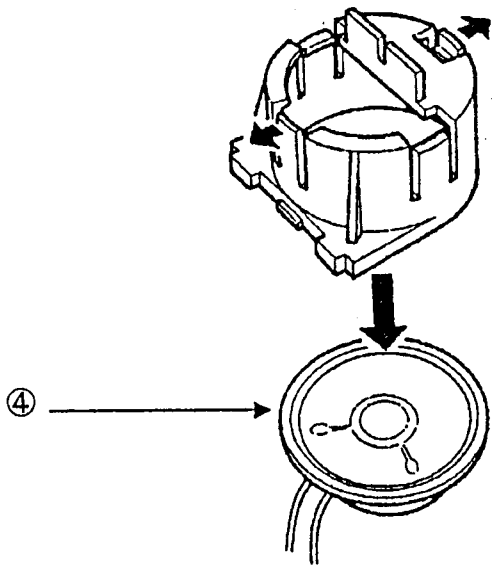


Note: CN15 is not used on UF-311.

2.19 Speaker (308)

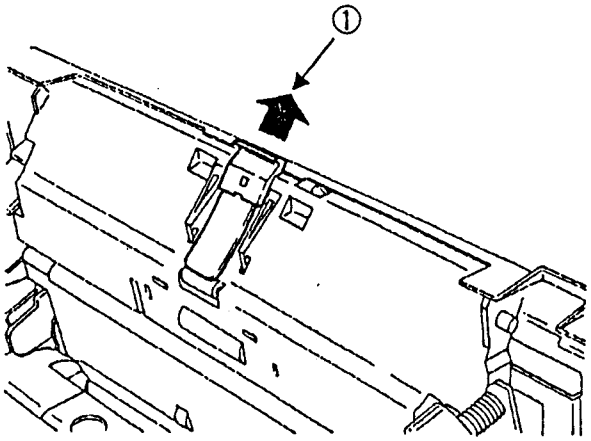
Step	Figure	Disassembly Procedure/Parts to be removed
1		Remove the GPM (see Chapter 2.8).
2	①	One Connector (CN 3)
	②	Four Screws (21)
	③	TX Chassis Bracket (309)
3	④	Speaker (308)

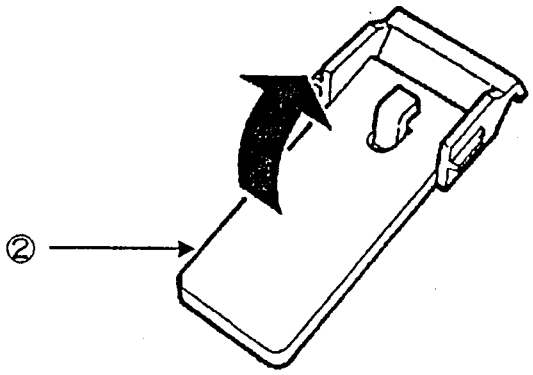




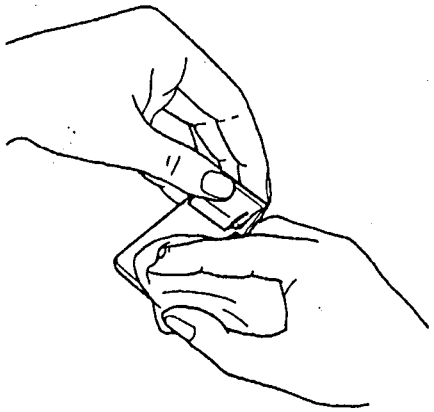
2.20 Separator Rubber (506)

Step	Figure	Disassembly Procedure/Parts to be removed
1		Open the ADF Door.
2	①	Separator Rubber Holder (505)
	②	Separator Rubber (506)



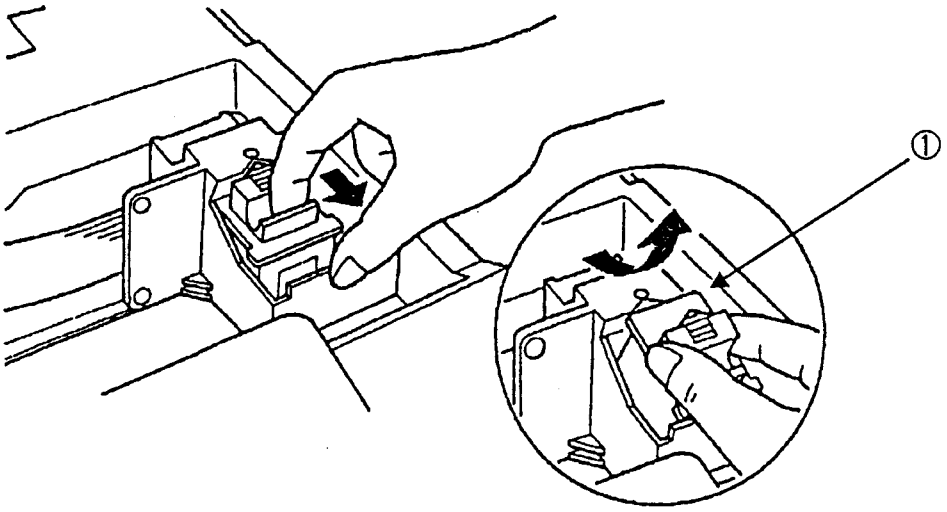


Cleaning : 1. Remove the Separator Rubber Holder.
2. Clean with a soft cloth soaked with ethyl alcohol.



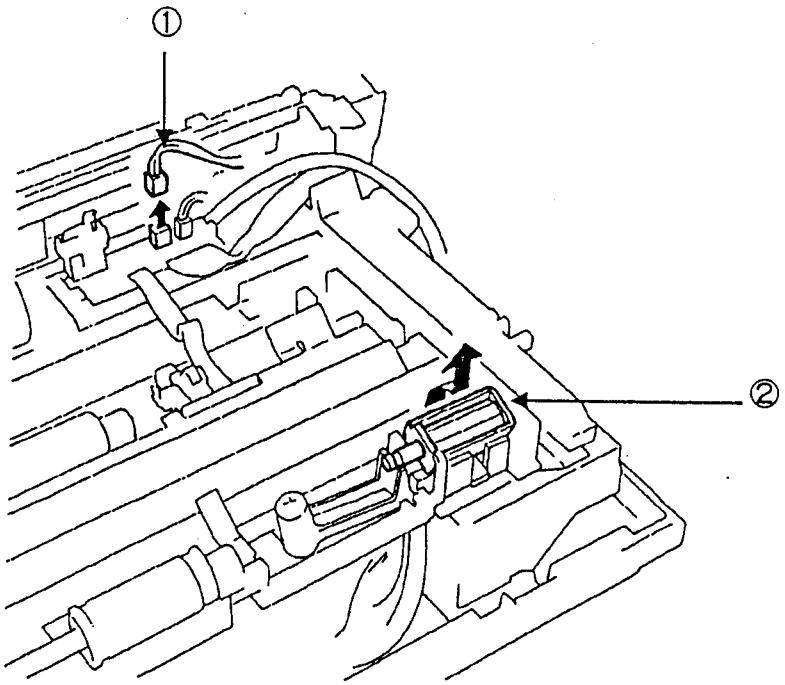
2.21 Print Cartridge (808)

Step	Figure	Disassembly Procedure/Parts to be removed
1		Open the ADF Door and Printer Cover.
	①	Ink Cartridge (808)



2.22 Stamp Solenoid (437) (UF-312)

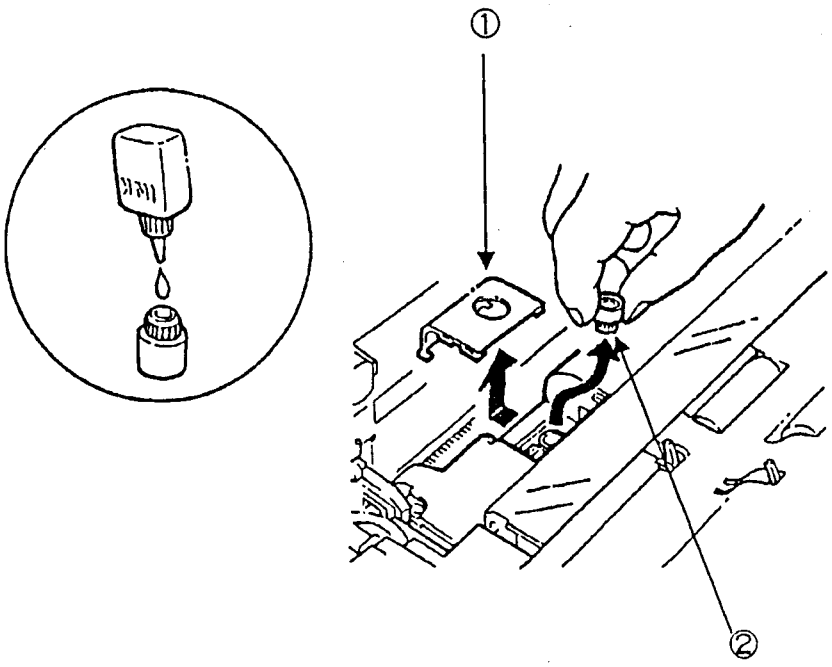
Step	Figure	Disassembly Procedure/Parts to be removed
1		Remove the Eject Cover Ass'y (see Chapter 2.6).
2		Remove the Document Guide (see Chapter 2.13).
3	①	One Connector (CN15)
	②	Stamp Solenoid (437)



Note: This part is not mounted on the UF-311.

2.23 Stamp (435) (UF-312)

Step	Figure	Disassembly Procedure/Parts to be removed
1		Open the ADF door.
2	①	Stamp Cover (405)
	②	Stamp (435)



Note1: Use Shachihata ⓧ stamper ink (22113) or equivalent when refilling.

Note2: This part is not mounted on the UF-311.

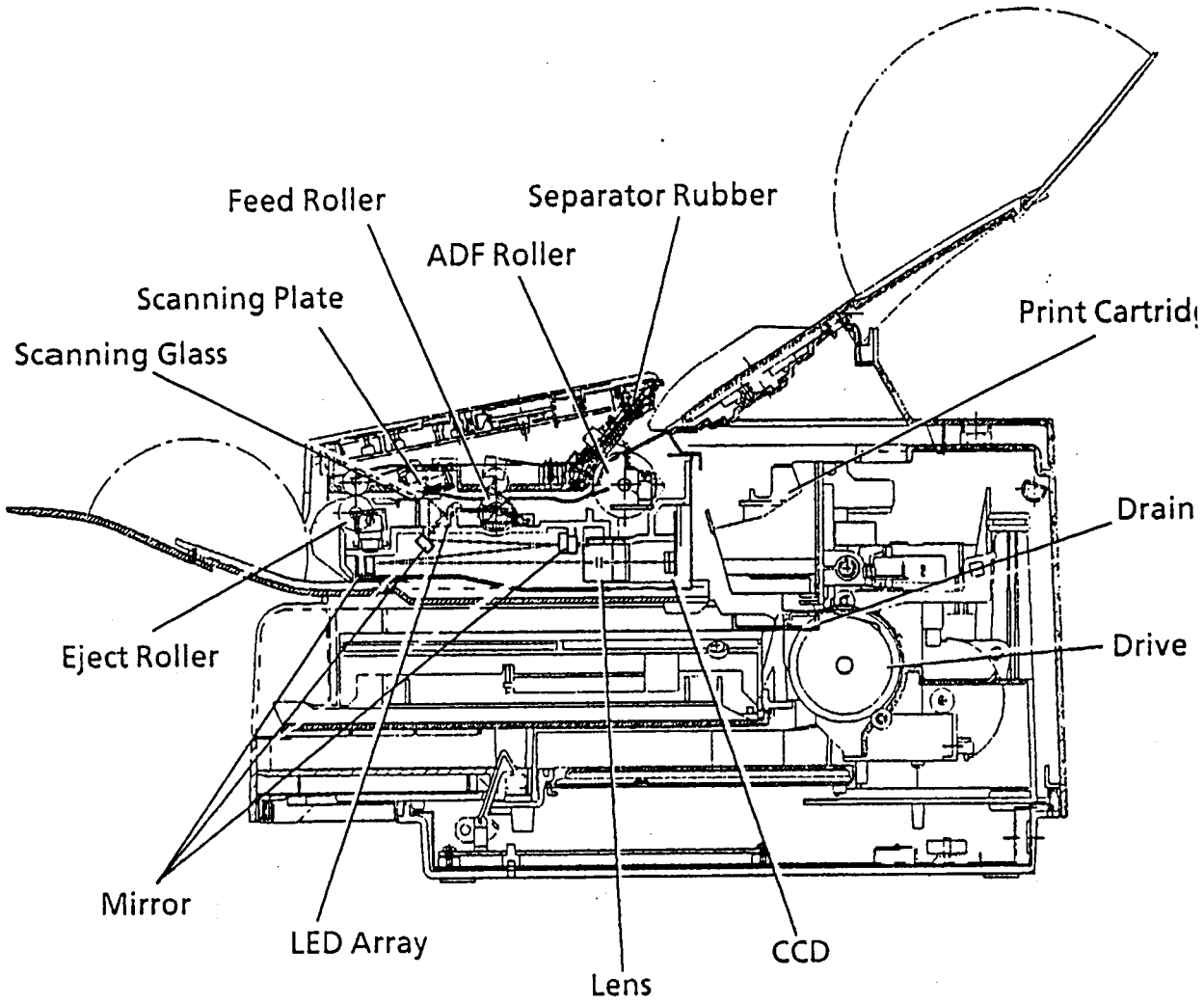
Chapter 3
Functional Operation

3.1 Introduction 3-2
3.2 Cartridge Movement 3-2
3.3 Paper Movement 3-3
3.4 Transmission 3-4
3.5 Print Cartridge Maintenance 3-5
3.6 Detecting the Recording Paper Position 3-6
3.7 Inkjet Printing 3-6
3.8 Detecting Out-of-Ink 3-7

3.1 Required Tool List

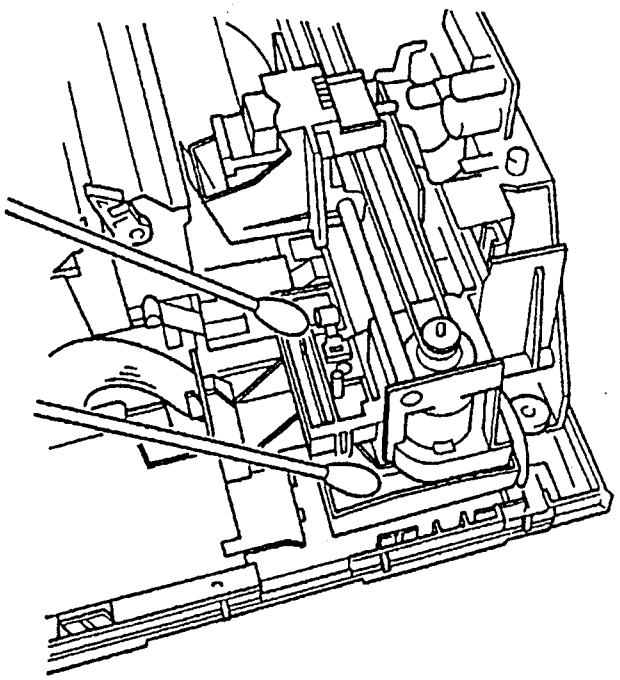
No.	Tool	No.	Tool
1	Soft Cloth	5	Tweezers
2	Ethyl Alcohol	6	Pliers
3	Phillips Screwdrivers (#2)	7	Cotton swab
4	Blade-tip Screwdriver (3/32")	8	Torx Screwdriver (T-10)

3.2 Preventive Maintenance Points



3.3 Cleaning the Drain Pan

(1) Turn off the Power.
(2) Remove the Printer Cover.
(3) Slide the Ink Cartridge to the left side.
(4) Wipe the ink in the Upper Drain Pan and Lower Drain Pan.



3.4 Maintenance List

The cycle period outlined below is a general guideline for maintenance.
However, the environmental condition and actual use will vary these factors.
The cycle peroid below is given for reference only.

No.	Items	Cleaning		Replacement	
		Cycle	Procedure	Cycle	Procedu
1	Scanning Glass	3 months	See P. 2-18	--	--
2	Scanning Plate	3 months	See P. 2-16	--	--
3	Feed Roller	3 months	See P. 2-23	3 - 5 years (30,000 documents)	See P. 2-
4	ADF Roller	3 months	See P. 2-21	1 - 3 years (10,000 documents)	See P. 2-
5	Separator Rubber	3 months	See P. 2-26	1 - 3 years (10,000 documents)	See P. 2-
6	Print Cartridge	3 months	See GPM Manual.	See GPM Manual. (Order No. MGCS911220S1)	See P. 2-
7	Drain Pan	3 months	See P. 3-3	--	--
8	Drive Roller	3 months	See GPM Manual.	--	--
9	LED Array	--	--	3 - 5 years (500 hours)	See P. 2-
10	Mirror	3 months	See P. 2-20	--	--
11	Eject Roller	3 months	See P. 2-22	3 - 5 years (30,000 documents)	See P. 2-

3.5 Program (ROM)

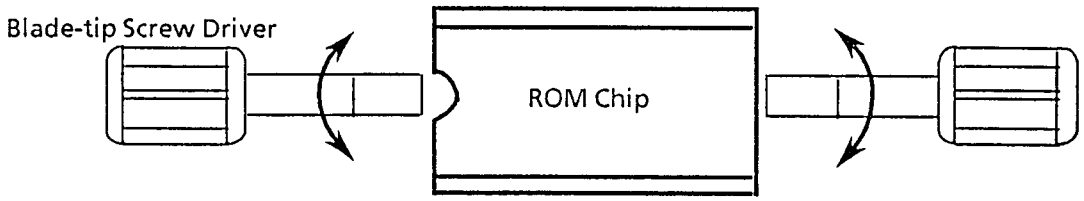
3.5.1 Replacement Procedure

(ROM is mounted on FCBRMPC Board.)

(1) Disconnect power cord.

(2) Remove the Top Cover and Paper Supply Tray.

(3) Remove ROM with blade-tip screw driver or equivalent tool.

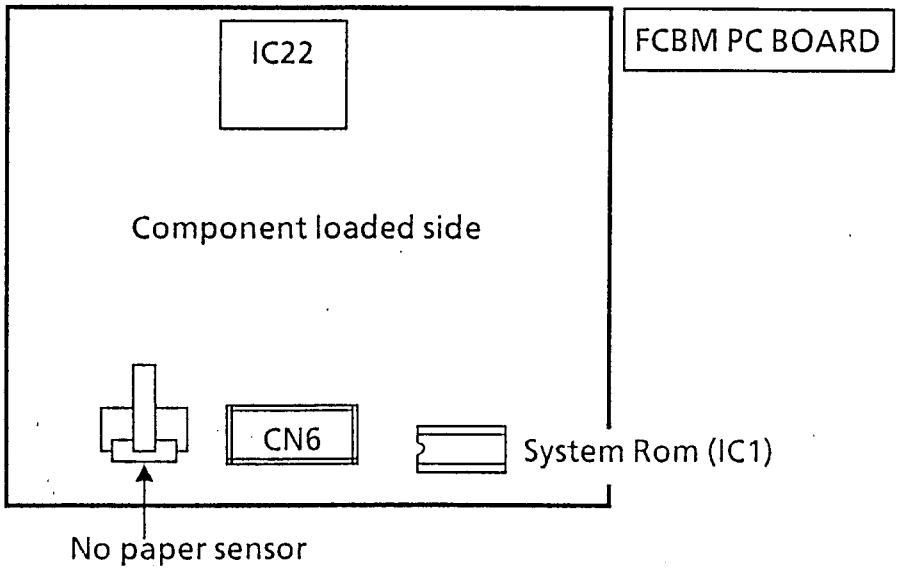


(4) Insert new ROM.

(5) Reassemble machine.

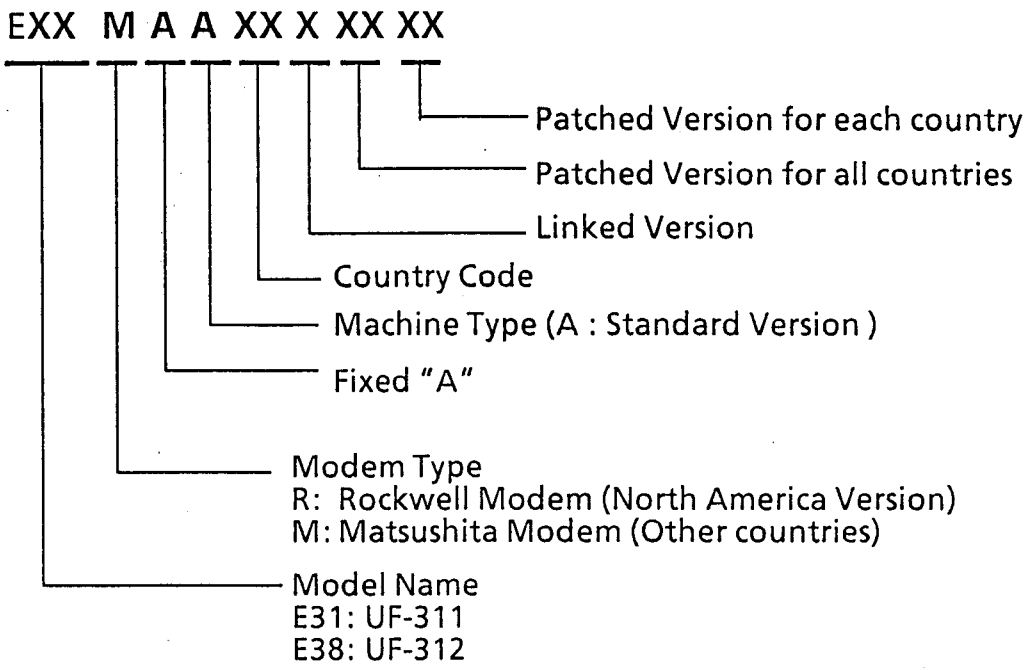
(6) Perform Test Mode No. 6 - Parameter Initialize.

3.5.2 ROM Location



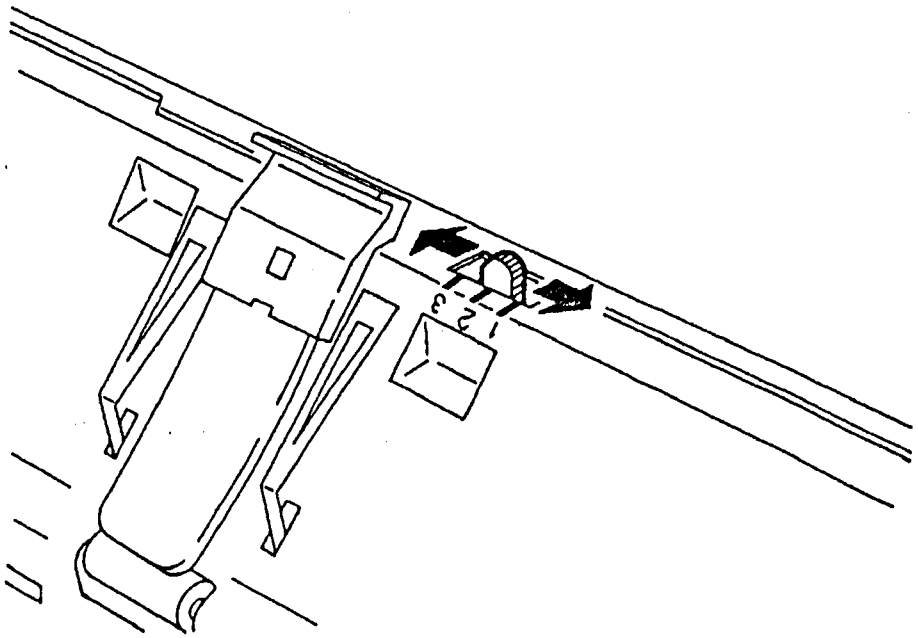
3.5.3 ROM Label

- Software for System Control



Note: Patched Version will be incremented in order, whenever the software is modified. When the linked Version is incremented, patched Version will be reset to "00".

3.6 ADF Pressure



Slide the Pressure Adjusting Lever.
The pressure increases in proportion to the position of the Pressure Adjusting Lever.

- To prevent multifeeding, set the Pressure Adjusting Plate in position 3.
- To prevent insert failure, set the Pressure Adjusting Plate in position 1.
- The Pressure Adjusting Plate is normally set to position 2.

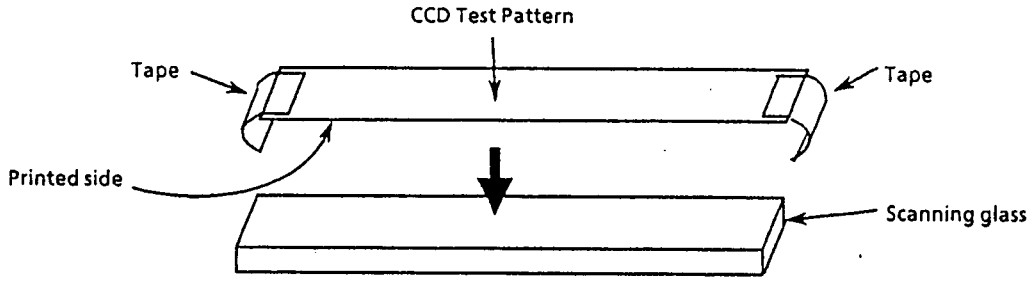
3.7 CCD Alignment

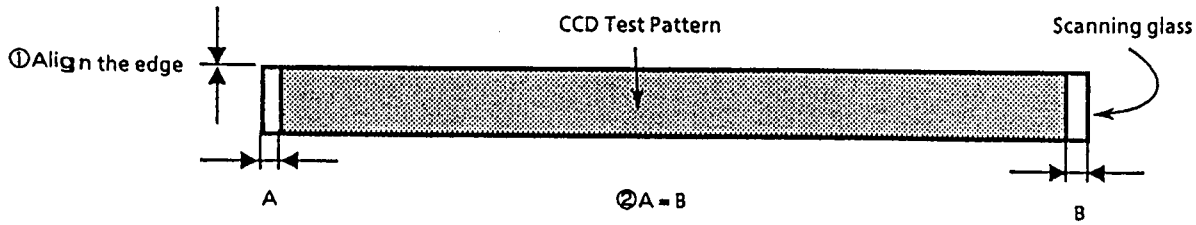
The CCD PC Board (616) is factory adjusted using special precision equipment and normally should not be replaced in the field. It is recommended that the entire Scanner Block Chassis Ass'y (401) be replaced. This will insure that the CCD PC Board (616) is aligned properly.

If the CCD PC Board (616) is replaced, it can temporarily be aligned by following the procedure given below.
NOTE: The picture quality may not be the same as a unit that has been factory set.

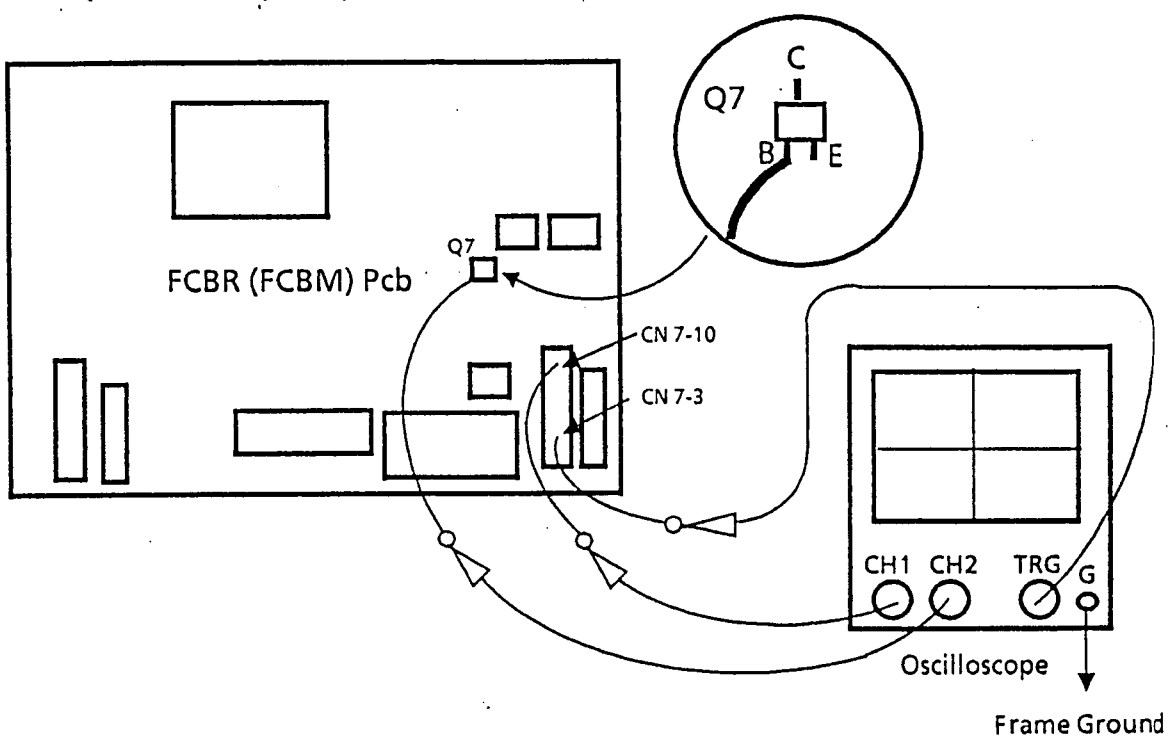
TOOLS REQUIRED
1) A 2 channel oscilloscope
2) CCD Test Pattern - a copy can be made from the pattern shown in the Appendix. It must be reproduced to the same size as the sample pattern in the Appendix (1:1 ratio).

PROCEDURE
1. Remove Covers (see chapter 2.4 and 2.5).
2. Remove GPM unit (see chapter 2.8).
3. Tape the Printer Cover actuator down.
4. Position the CCD Test Pattern as follow
   1) Remove the Document Guide Ass'y (430) and Scanning Glass (608) (see chapter 2.18).
   2) Remove the CCD Cover Ass'y (602).
   3) Using scotch tape, position the CCD Test Pattern on the Scanning Glass (608) as shown below. The CCD Test Pattern must be faced down and centered on the Scanning Glass (608).
   4) Replace the Scanning Glass (608) and Document Guide Ass'y (430).

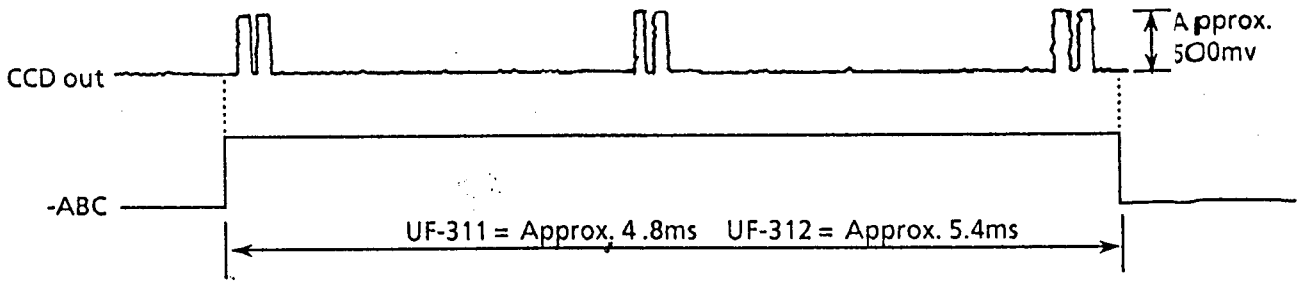




5. Connecting oscilloscope
   1) Carefully solder 3 probe wires to the components shown below on the FCBR/FCBM PC Board as shown below.
      a. CN7 pin 3 (Trigger)
      b. CN7 pin 10 (CCD out)
      c. Q7 base (-ABC)



6. Adjusting the CCD PC Board
   1) Enter Test Mode No. 10 (see chapter 5.10).
   2) Monitoring the oscilloscope, carefully adjust the position of the CCD Board until the output is obtained as shown below. Make sure that the ADF Door is closed.
   3) Carefully tighten both mounting screws on the CCD PC Board.



7. Disconnect the oscilloscope and reassemble the machine.
8. Run a test in copy mode to ensure the unit is working properly.

APPENDIX
CCD TEST PATTERN

Chapter 4
Troubleshooting

[Field]

4.1 General Troubleshooting Flowchart 4-2
4.2 Power LED Not Lit 4-3
4.3 Display Panel Malfunction 4-4
4.4 Information Code Displayed 4-5
4.5 Recording Paper Path Trouble 4-13
4.6 Document Jam 4-15
4.7 Document Skew 4-16
4.8 No Document Feed 4-17
4.9 Transmitted Copy Quality Poor 4-18
4.10 Printed Copy Quality Poor 4-19
4.11 Dialing Error 4-20
4.12 Polling Operation Trouble 4-21
4.13 Communication Trouble 4-22

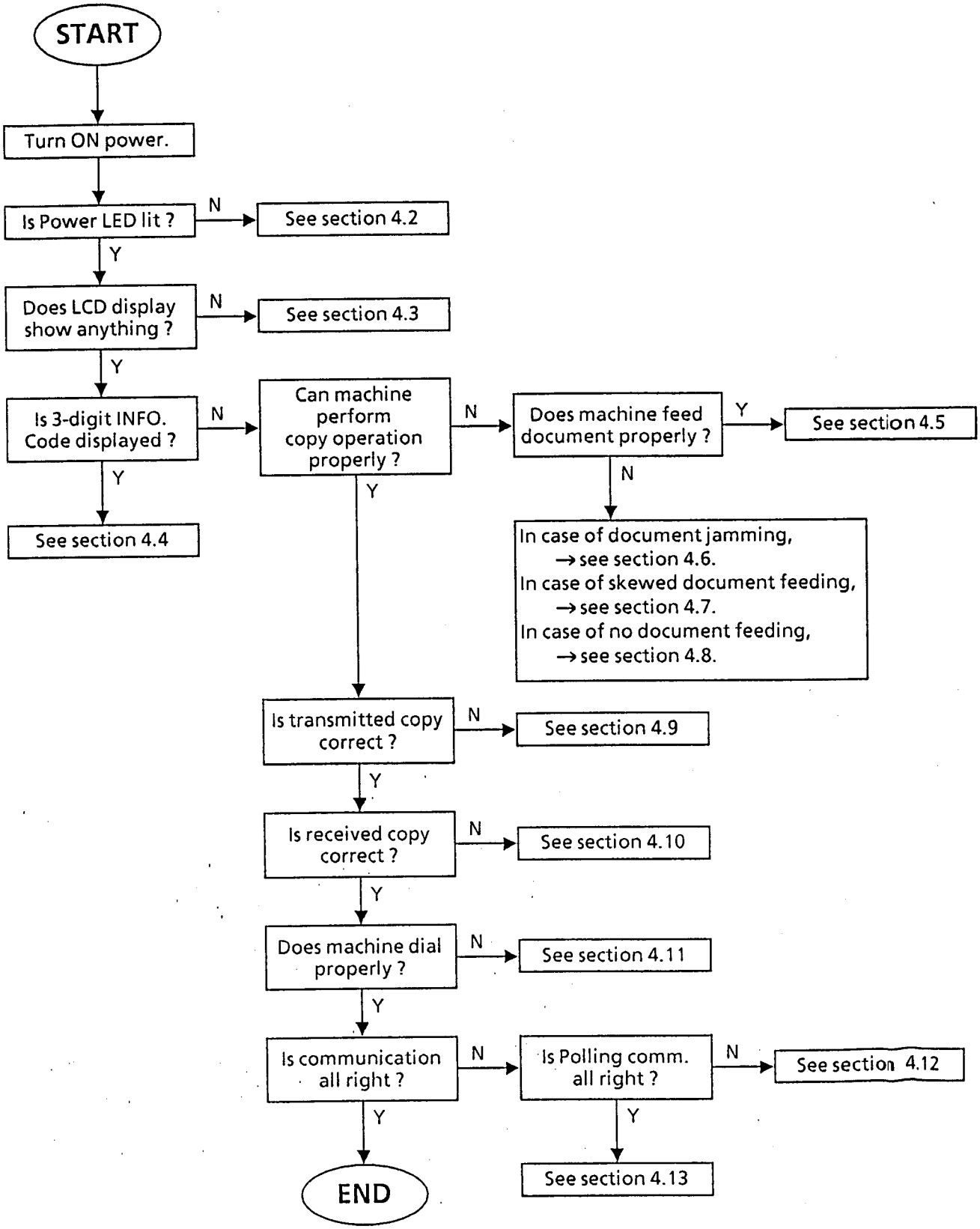
[Workshop]

4.14 FCBM PCB Defective 4-23

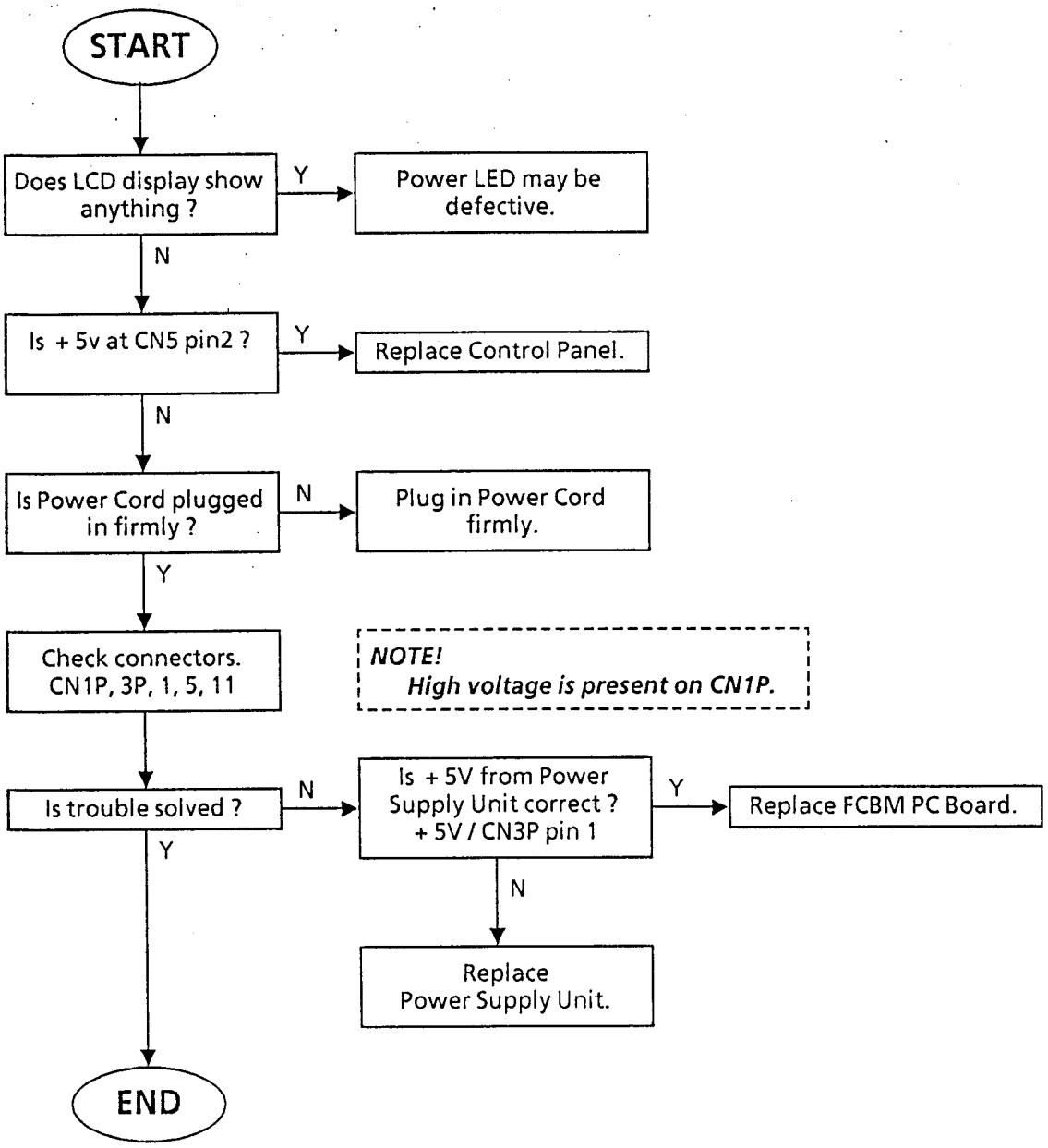
[Reference]

4.15 Information Code Table 4-34
4.16 Diagnostic Code Table 4-39

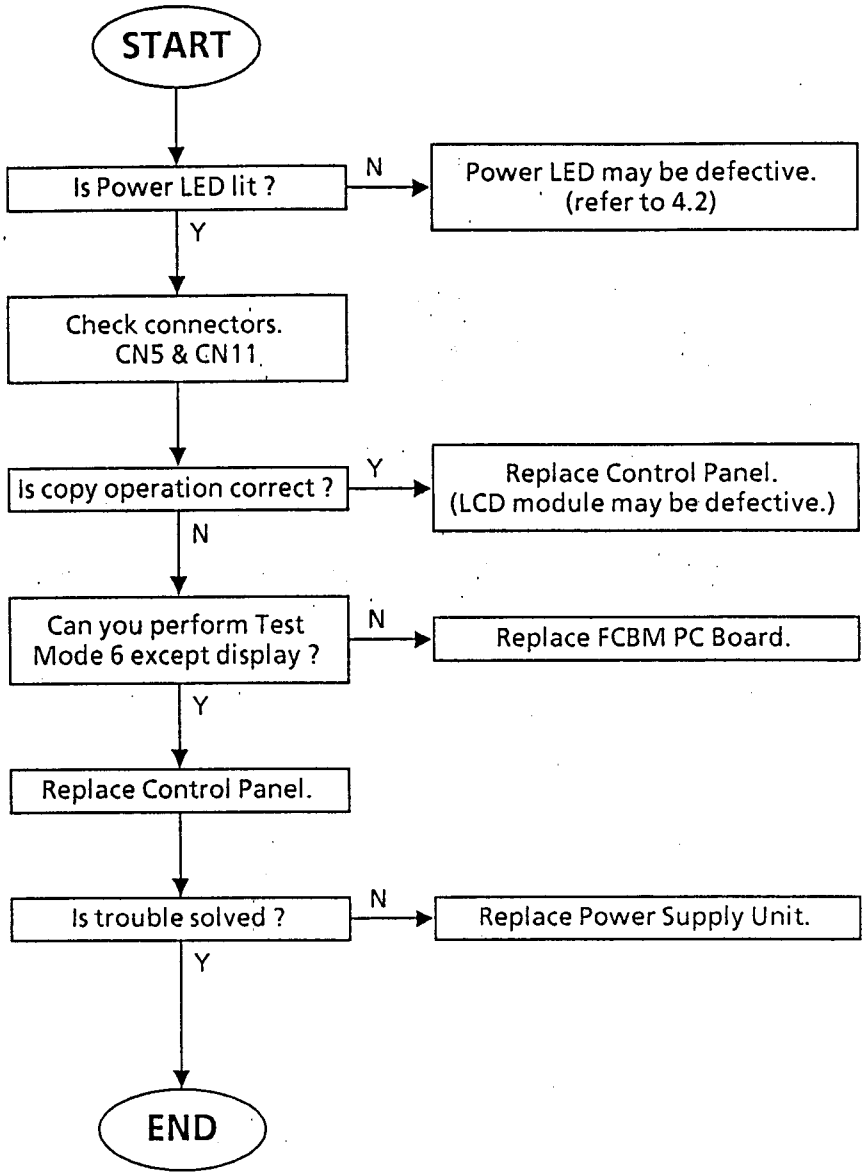
4.1 General Troubleshooting Flowchart



4.2 Power LED Not Lit



4.3 Display Panel Malfunction



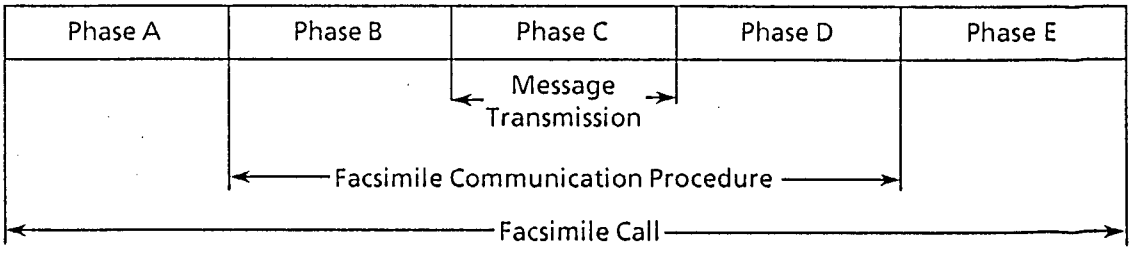
4.4 Information Code Displayed

A 3-digit information code is displayed to show unit status. It is also printed on the journal. The relation between the information code and the corresponding chapter for troubleshooting is shown in the table below.

INFO. Code	Chapter	Brief Trouble Explanation	Phase
001	4.5.1	Recording paper jam	C
002	4.5.1	Recording paper jam	C
010	4.5.2	No recording paper	B, C
030	4.6	Scanner misfeeding	B
031	4.6	Document too long	C
400	4.4.1	Transmission error	B
402	4.4.2	Transmission error	B
403	4.12	Polling reception error	B
404	4.4.3	Transmission error	B
405	4.4.3	Transmission error	B
407	4.4.3	Transmission error	D
408	4.4.5	Transmission error	D
409	4.4.5	Transmission error	D
411	4.12	Polling reception error	B

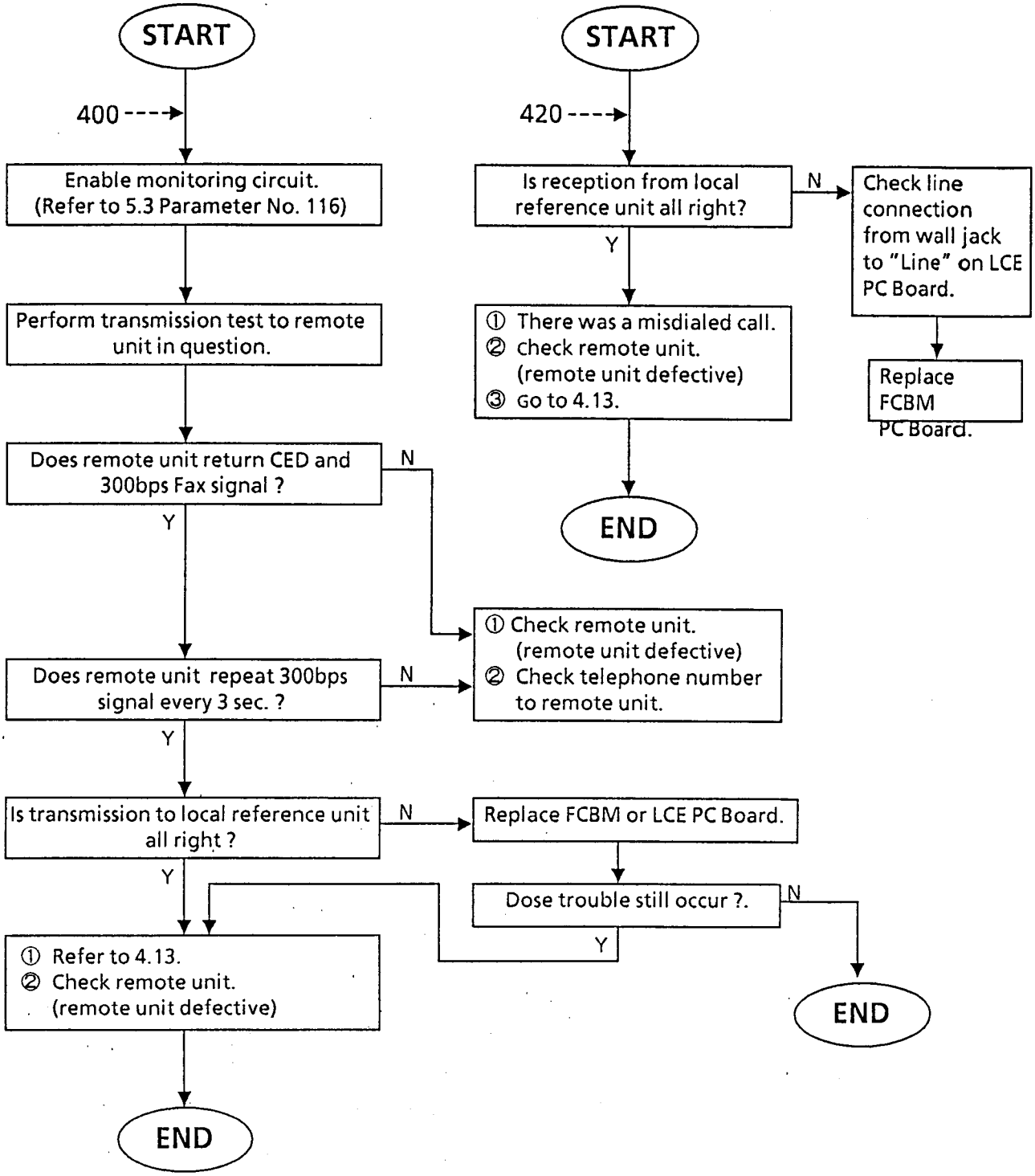
INFO. Code	Chapter	Brief Trouble Explanation	Phase
414	4.12	Polling reception error	B
415	4.12	Remote side misoperation	B
416	4.4.4	Reception error	D
417	4.4.5	Reception error	C
418	4.4.5	Reception error	C
420	4.4.1	Reception error	B
422	4.4.2	Transmission error	B
434	4.4.6	Noise level too high	B
459	4.4.7	Reception error	C
490	4.4.5	Reception error	C
494	4.4.7	Reception error	C
495	4.4.7	Reception error	C
630	4.11	Remote unit busy	B

Phase

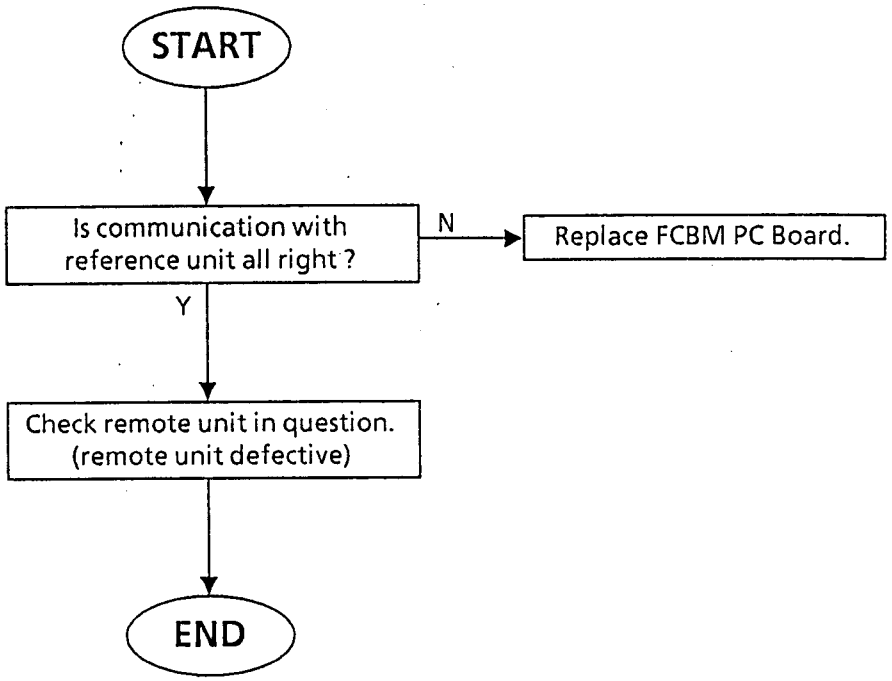


Phase A: Call establishment
Phase B : Pre-message procedure
Phase C: Message transmission
Phase D: Post-message procedure
Phase E : Call release

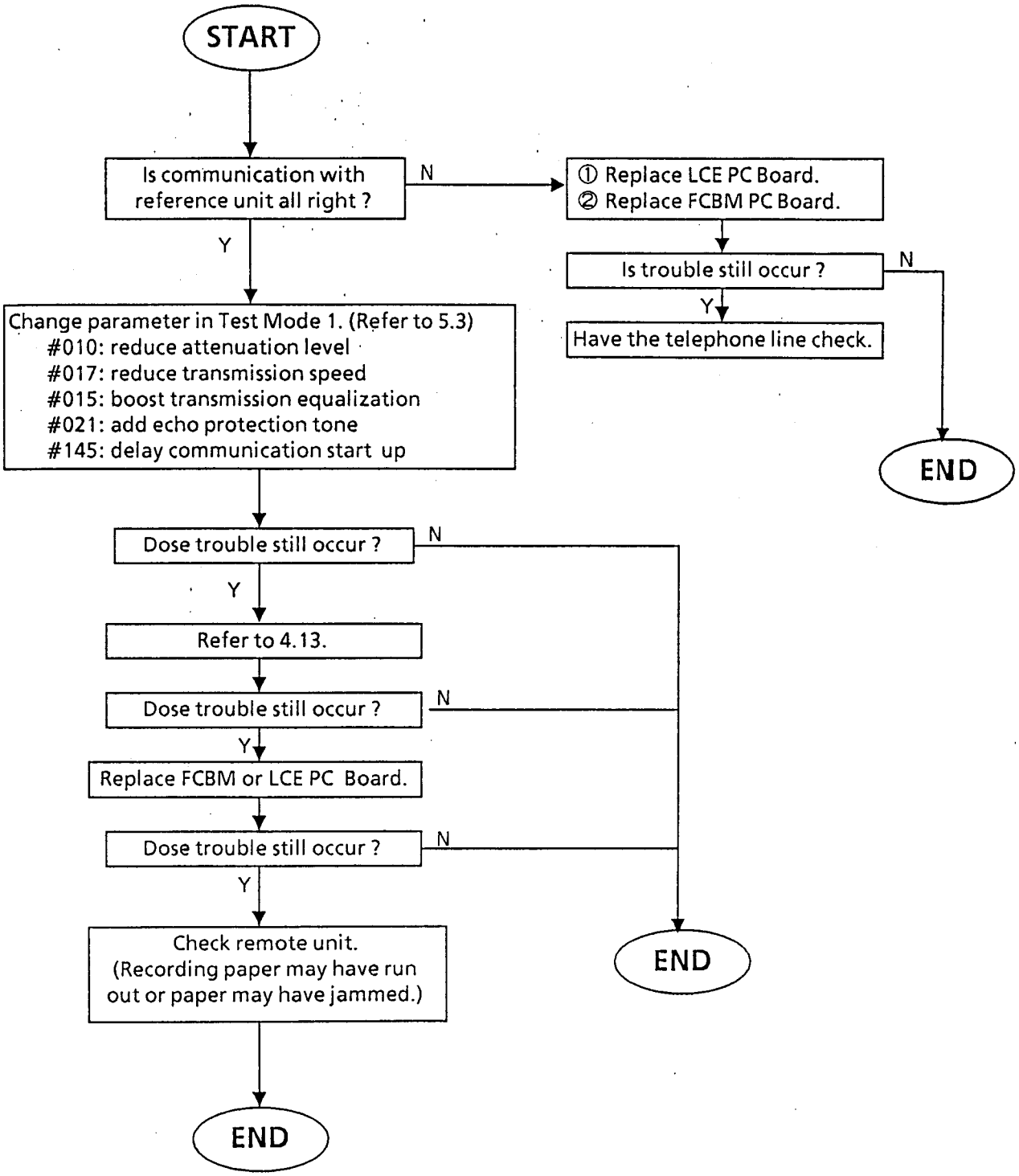
4.4.1 INFO. Code: 400, 420



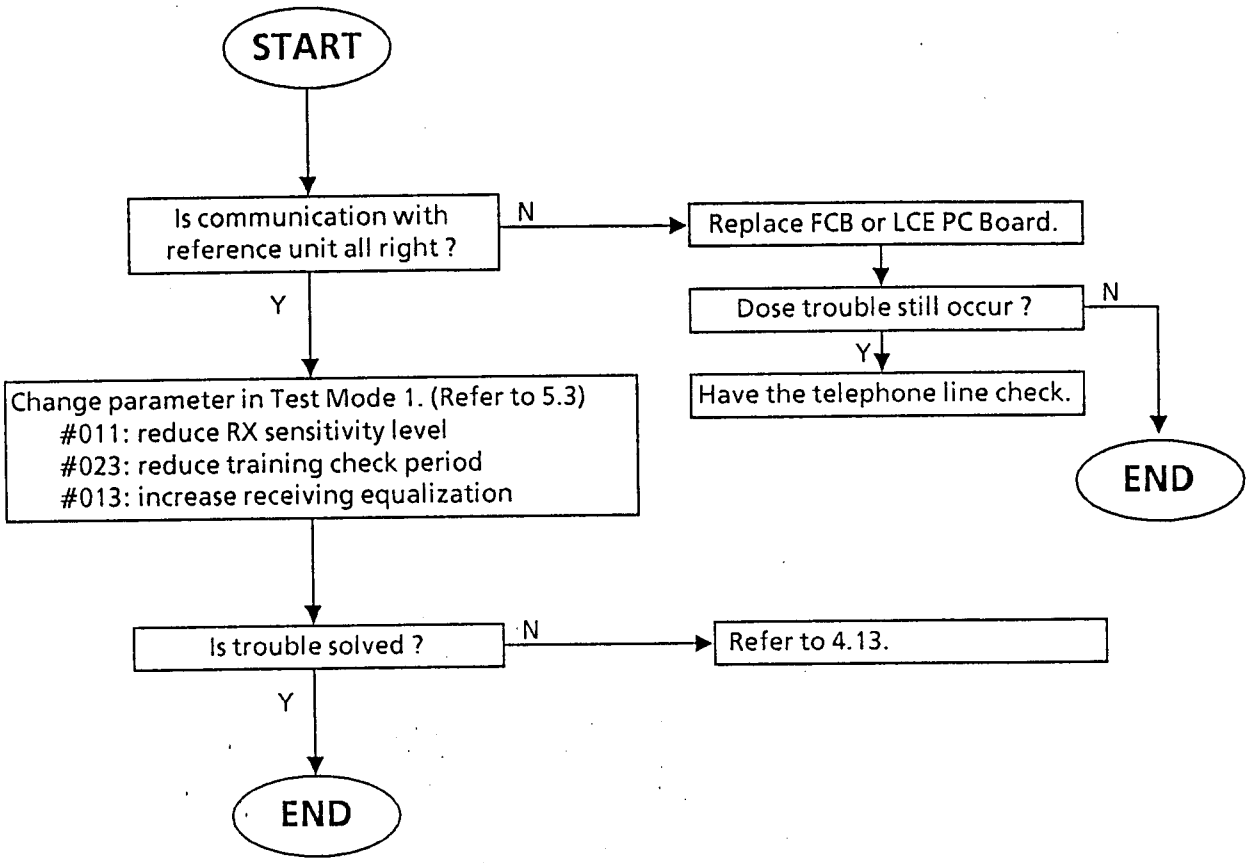
4.4.2 INFO. Code: 402, 422



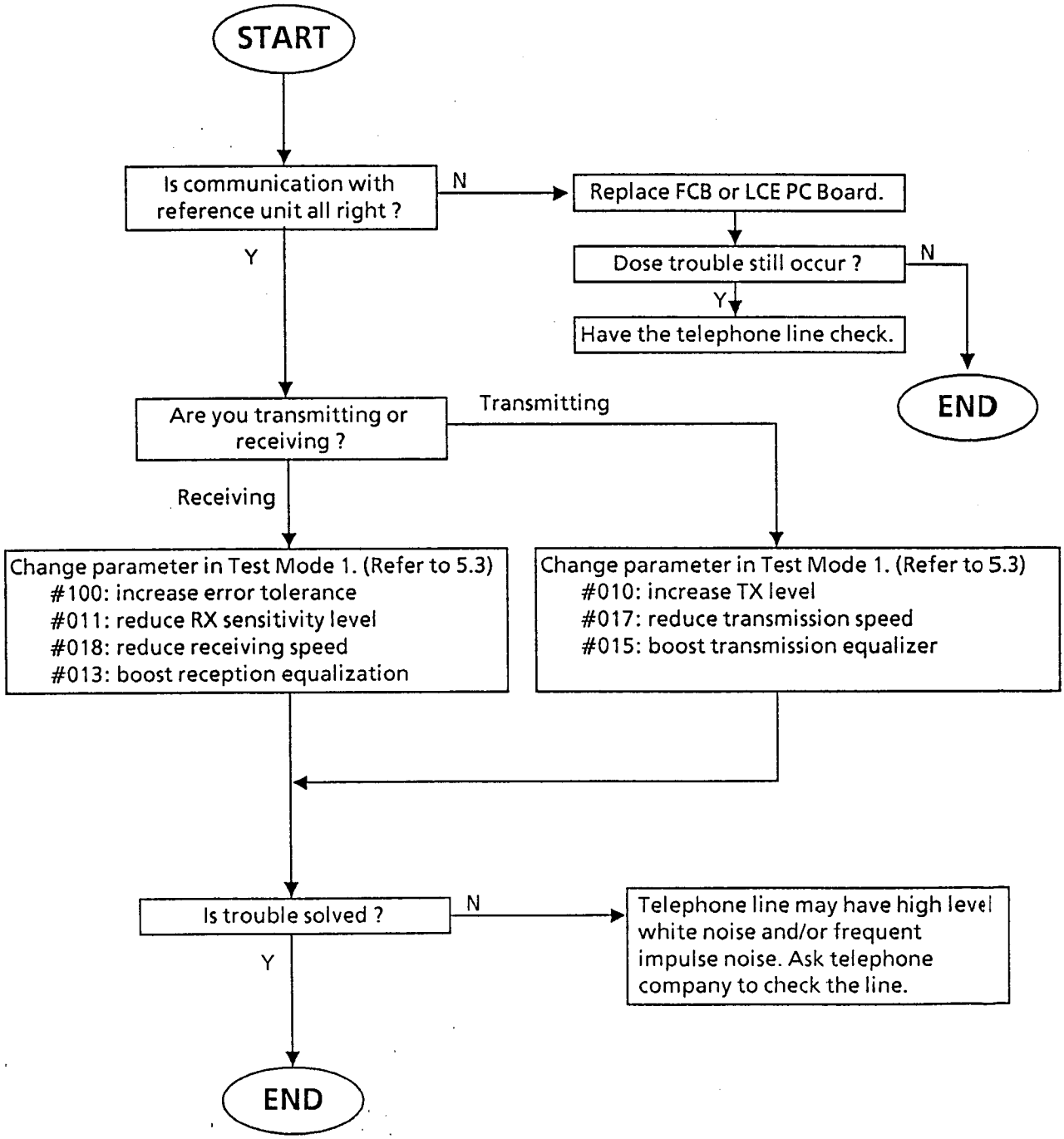
4.4.3 INFO. Code: 404, 405, 407



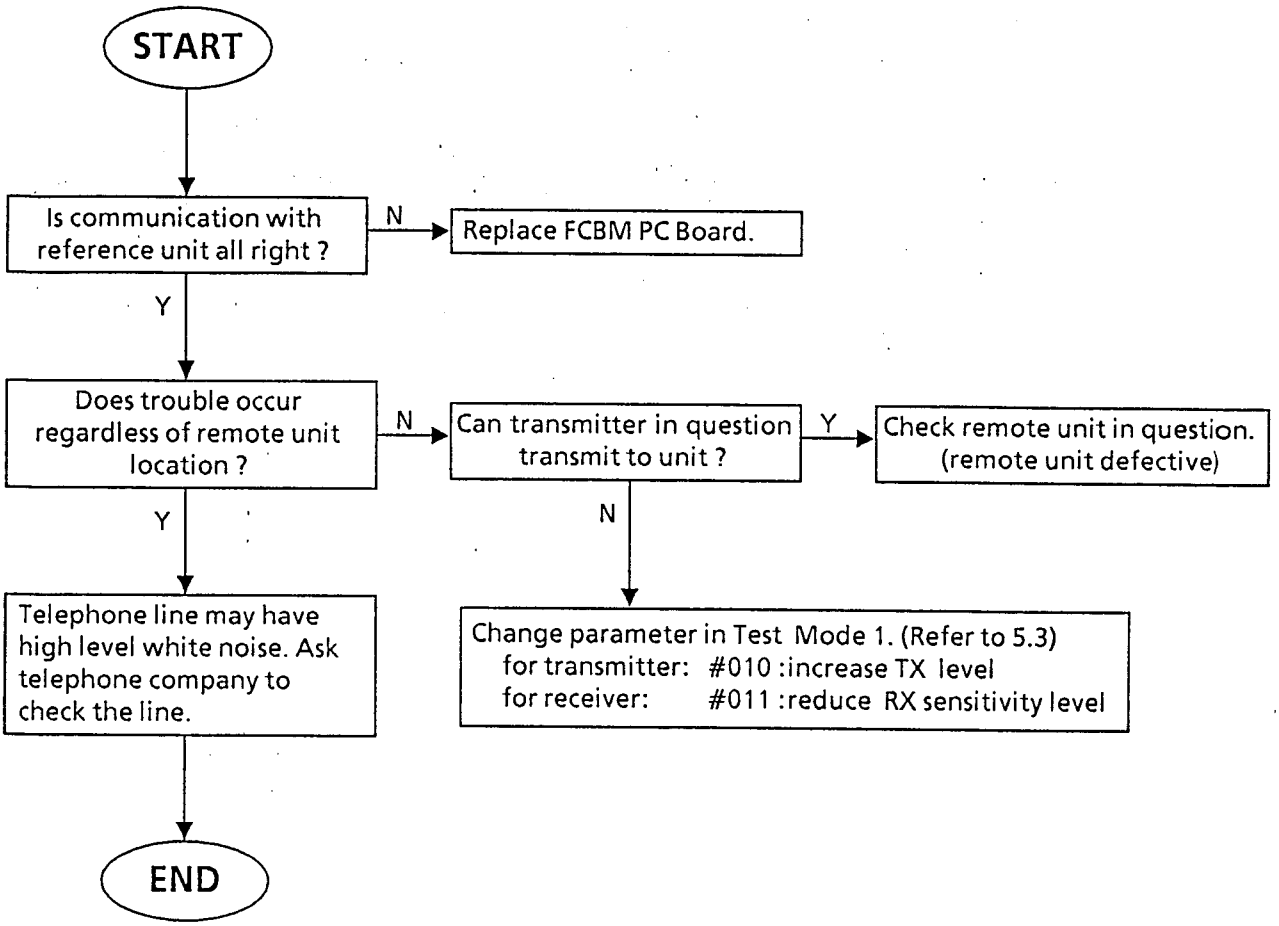
4.4.4 INFO. Code: 416



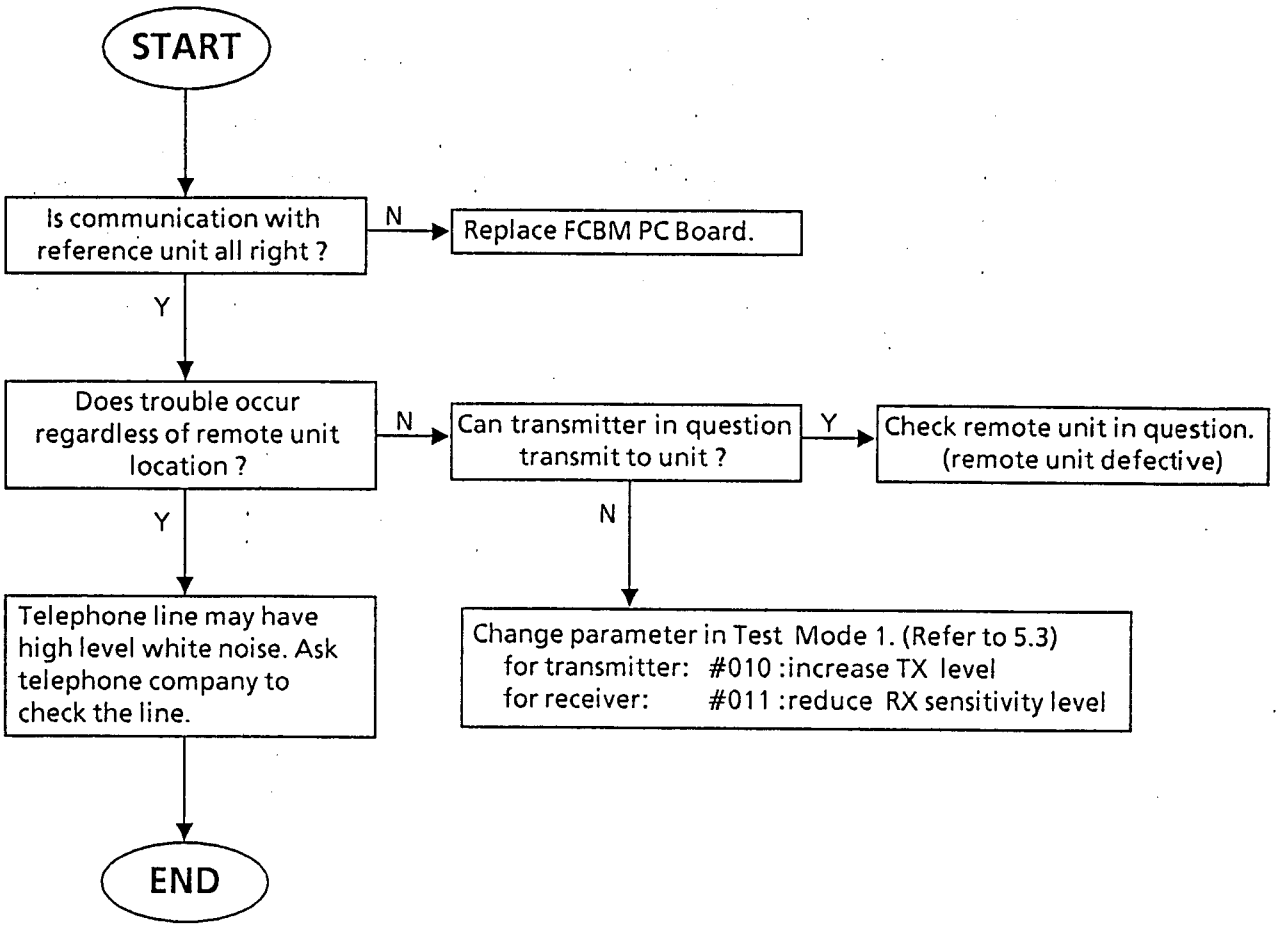
4.4.5 INFO. Code: 408, 409, 417, 418, 490


START
Is communication with reference unit all right ?
N
Replace FCB or LCE PC Board.
Y
Dose trouble still occur ?
N
Y
Have the telephone line check.
END
Are you transmitting or receiving ?
Transmitting
Receiving
Change parameter in Test Mode 1. (Refer to 5.3)
#100: increase error tolerance
#011: reduce RX sensitivity level
#018: reduce receiving speed
#013: boost reception equalization
Change parameter in Test Mode 1. (Refer to 5.3)
#010: increase TX level
#017: reduce transmission speed
#015: boost transmission equalizer
Is trouble solved ?
N
Telephone line may have high level white noise and/or frequent impulse noise. Ask telephone company to check the line.
Y
END

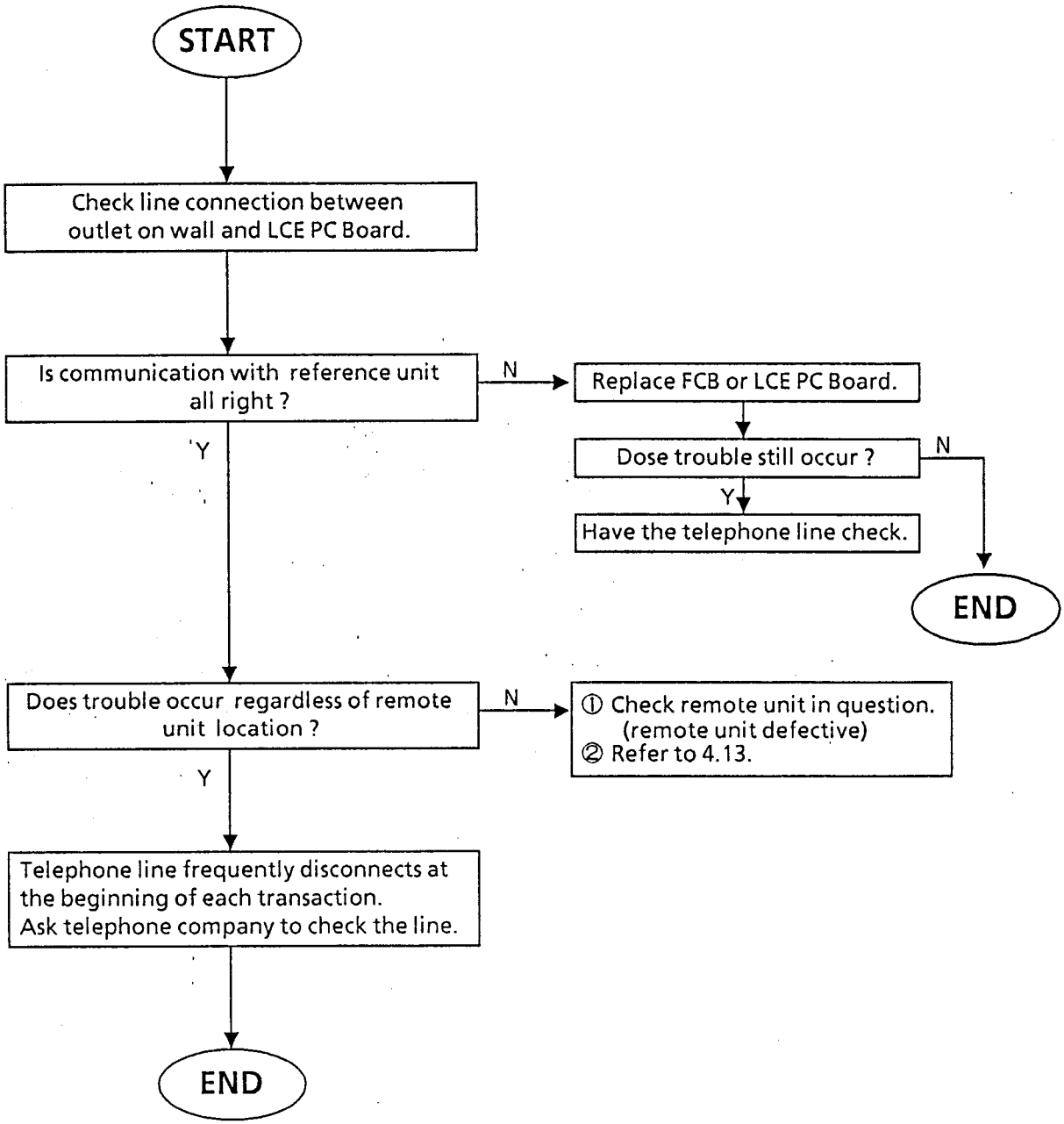
4.4.6 INFO. Code: 434


START
Is communication with reference unit all right ?
N
Replace FCBM PC Board.
Y
Does trouble occur regardless of remote unit location ?
N
Can transmitter in question transmit to unit ?
Y
Check remote unit in question. (remote unit defective)
Y
N
Telephone line may have high level white noise. Ask telephone company to check the line.
Change parameter in Test Mode 1. (Refer to 5.3)
for transmitter: #010 :increase TX level
for receiver: #011 :reduce RX sensitivity level
END

4.4.6 INFO. Code: 434

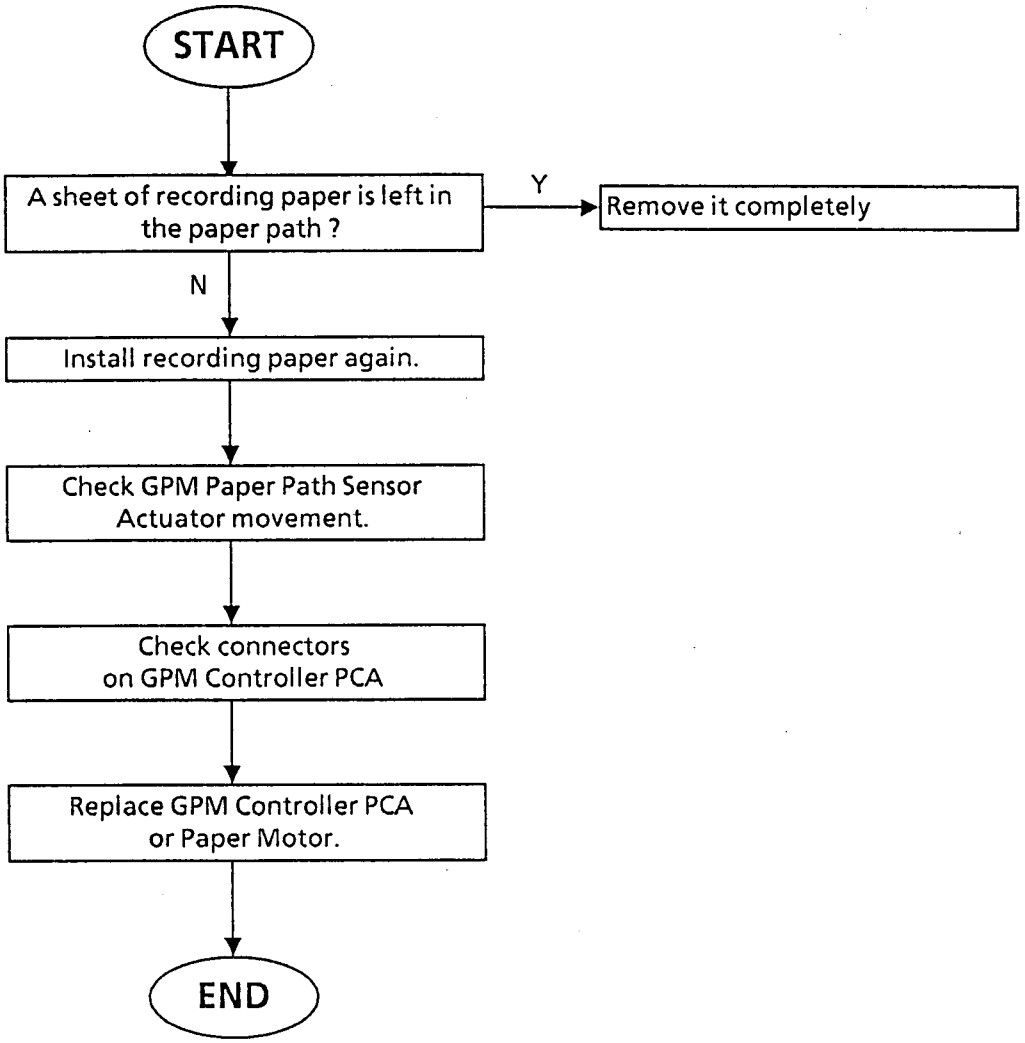

START
Is communication with reference unit all right ?
N
Replace FCBM PC Board.
Y
Does trouble occur regardless of remote unit location ?
N
Can transmitter in question transmit to unit ?
Y
Check remote unit in question. (remote unit defective)
Y
N
Telephone line may have high level white noise. Ask telephone company to check the line.
Change parameter in Test Mode 1. (Refer to 5.3)
for transmitter: #010 :increase TX level
for receiver: #011 :reduce RX sensitivity level
END

4.4.7 INFO. Code: 459, 494, 495


START
Check line connection between outlet on wall and LCE PC Board.
Is communication with reference unit all right ?
N
Replace FCB or LCE PC Board.
Dose trouble still occur ?
N
Y
Have the telephone line check.
END
Y
Does trouble occur regardless of remote unit location ?
N
① Check remote unit in question. (remote unit defective)
② Refer to 4.13.
Y
Telephone line frequently disconnects at the beginning of each transaction.
Ask telephone company to check the line.
END

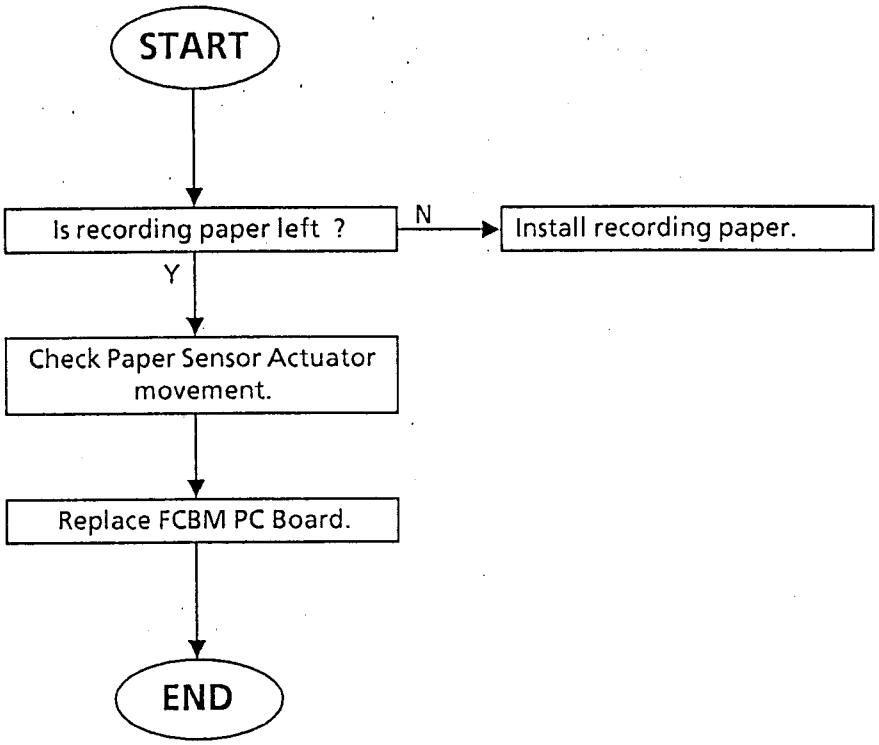
4.5 Recording Paper Path Trouble

4.5.1 INFO. Code : 001, 002

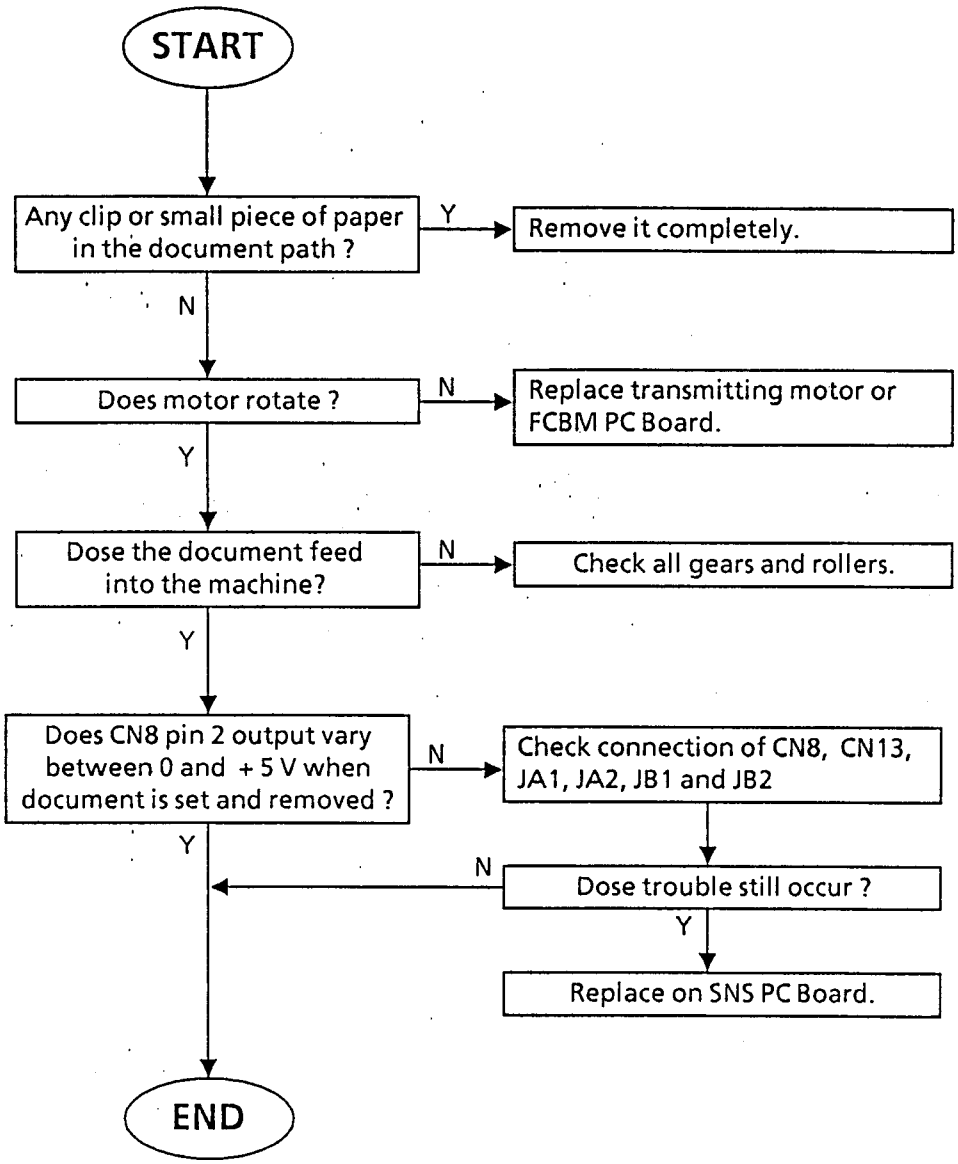

START
A sheet of recording paper is left in the paper path ?
Y
Remove it completely
N
Install recording paper again.
Check GPM Paper Path Sensor Actuator movement.
Check connectors on GPM Controller PCA
Replace GPM Controller PCA or Paper Motor.
END

NOTE: Also see 4.2 on GPM manual.

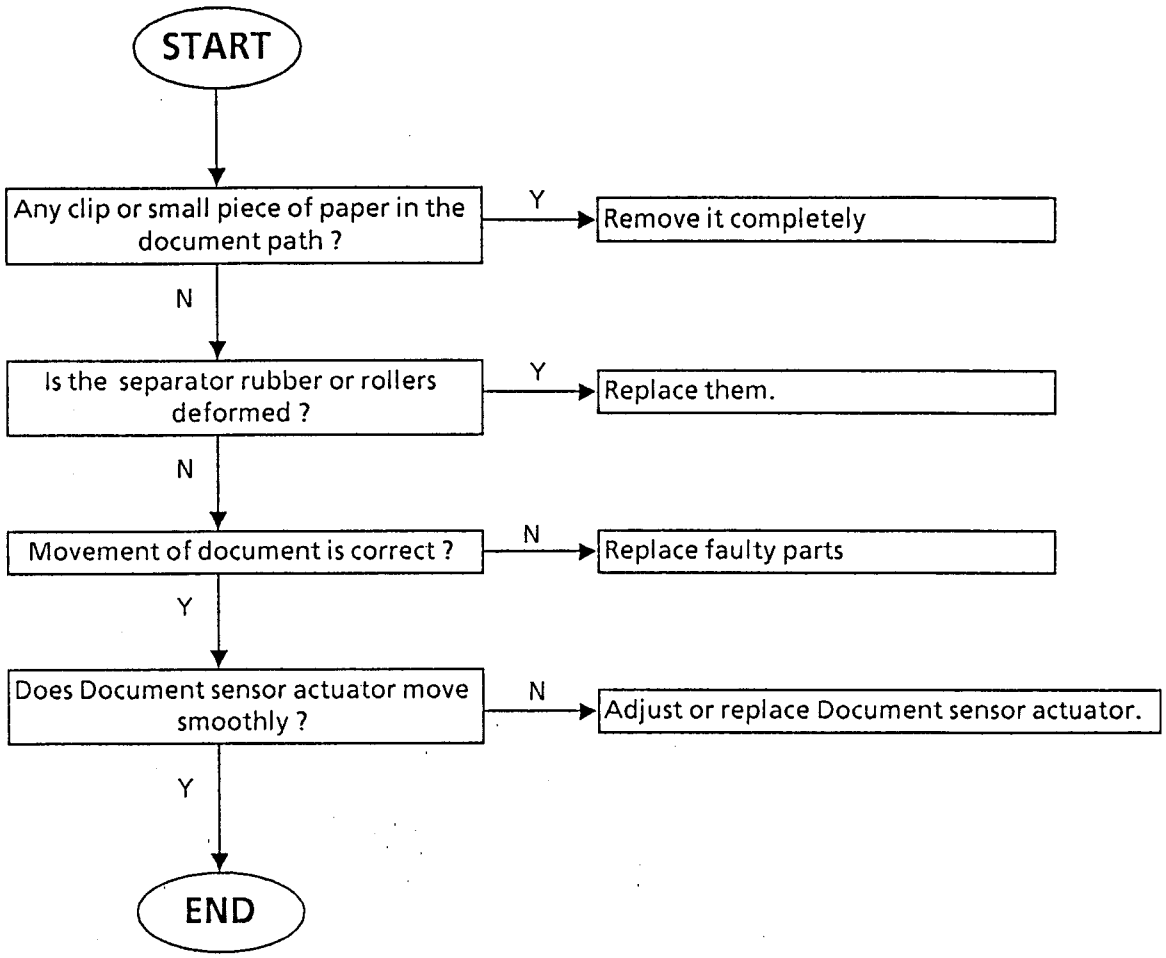
4.5.2 INFO. Code: 010



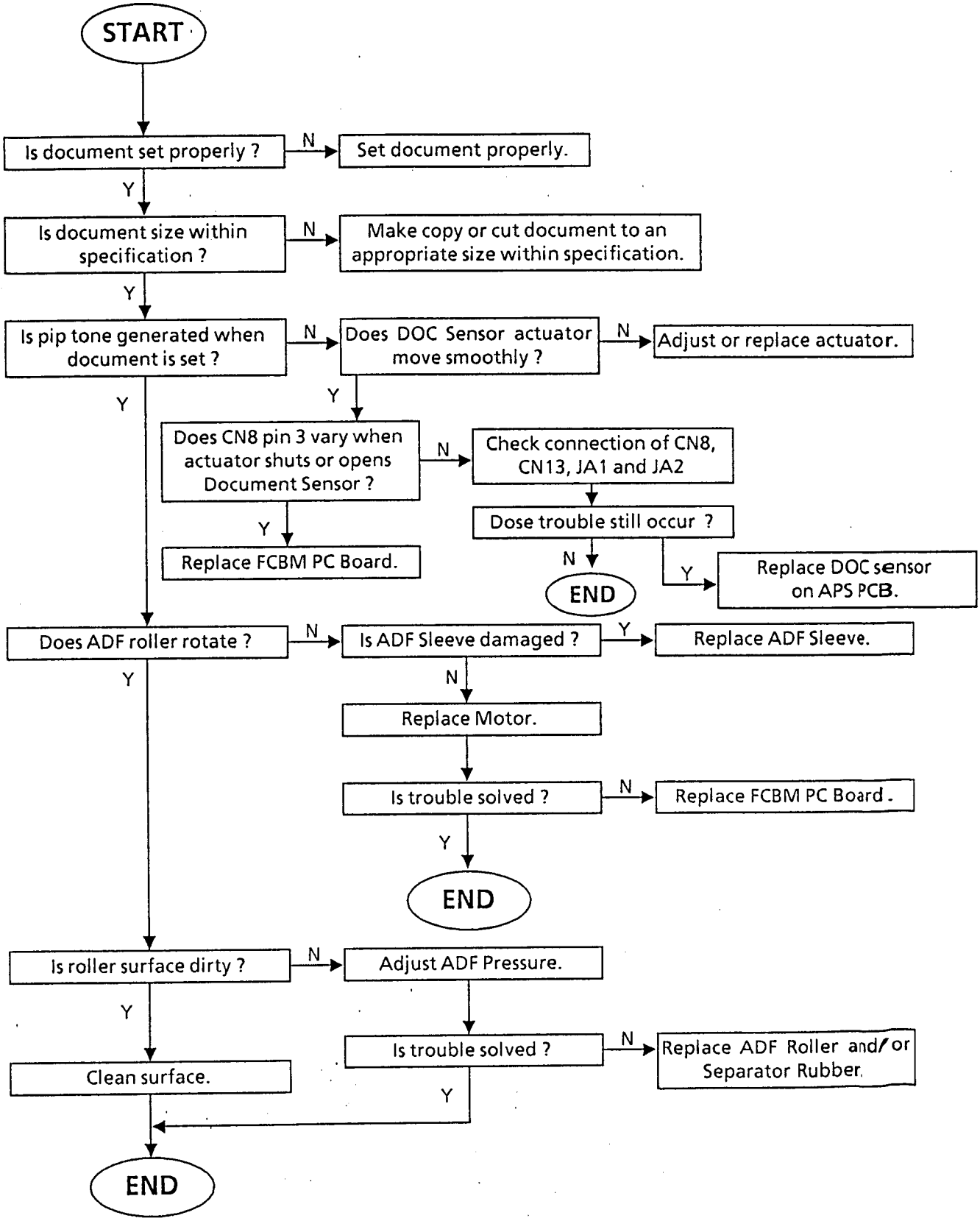
4.6 Document Jam (INFO. Code: 030,031)


START
Any clip or small piece of paper in the document path ?
Y
Remove it completely.
N
Does motor rotate ?
N
Replace transmitting motor or FCBM PC Board.
Y
Dose the document feed into the machine?
N
Check all gears and rollers.
Y
Does CN8 pin 2 output vary between 0 and + 5 V when document is set and removed ?
N
Check connection of CN8, CN13, JA1, JA2, JB1 and JB2
Y
N
Dose trouble still occur ?
Y
Replace on SNS PC Board.
END

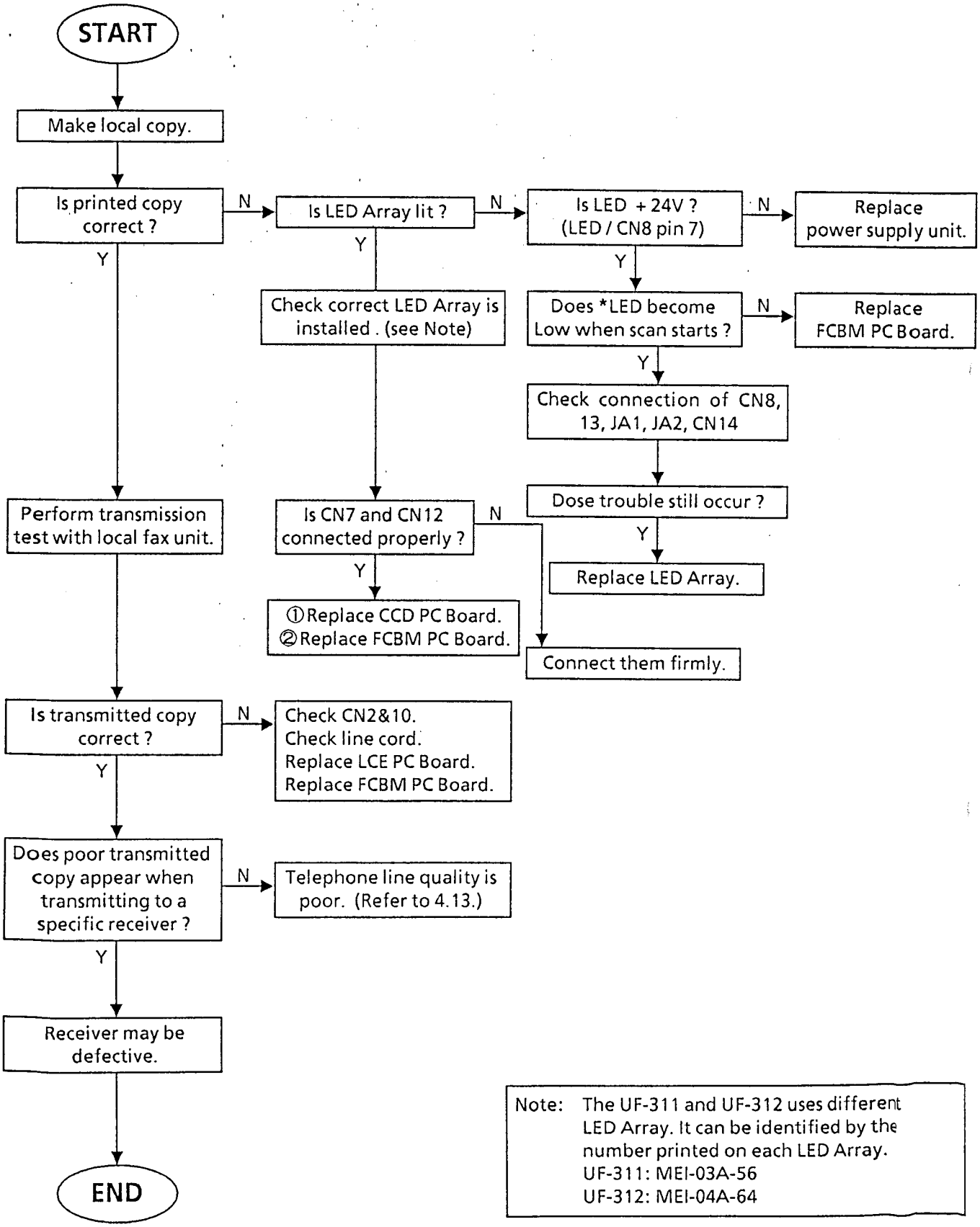
4.7 Document Skew



4.8 No Document Feed

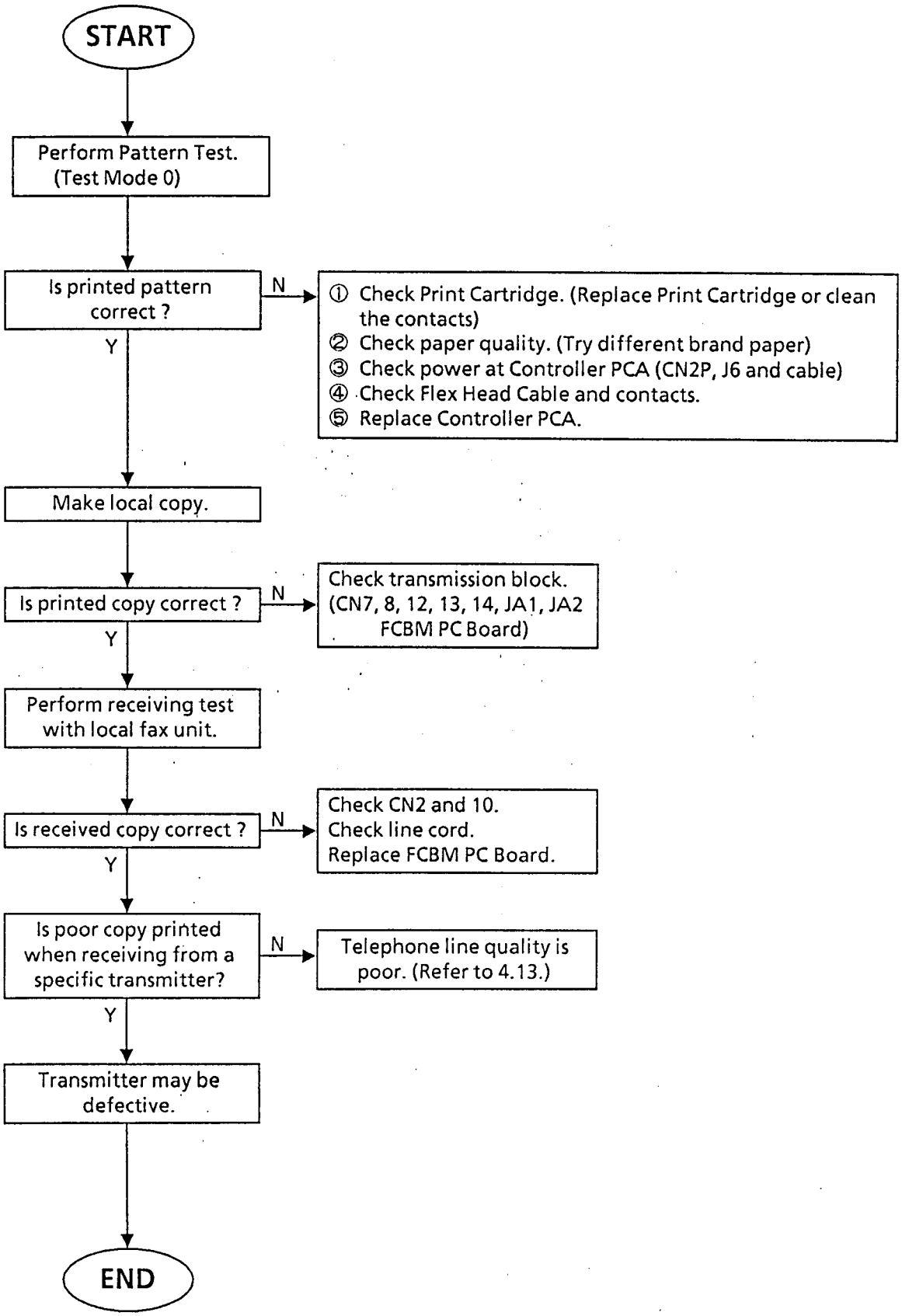


4.9 Transmitted Copy Quality Poor

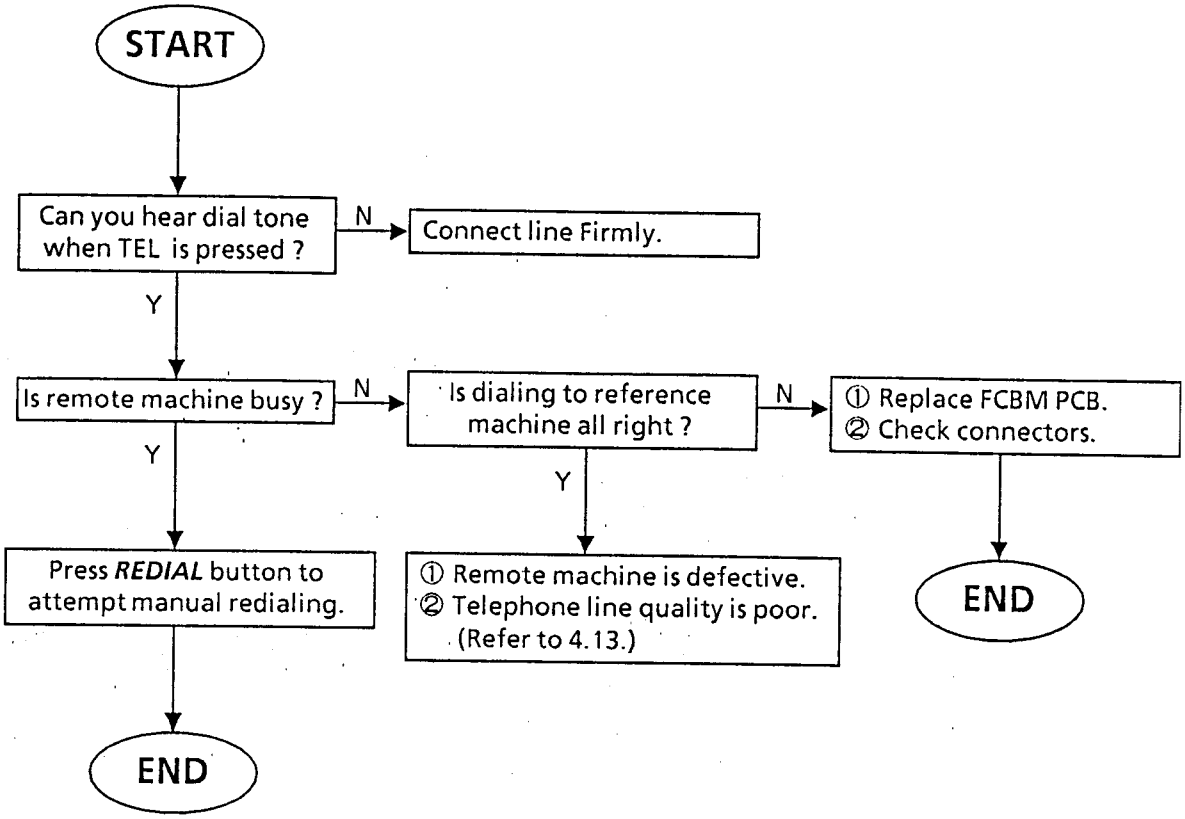


Note: The UF-311 and UF-312 uses different LED Array. It can be identified by the number printed on each LED Array.
UF-311: MEI-03A-56
UF-312: MEI-04A-64

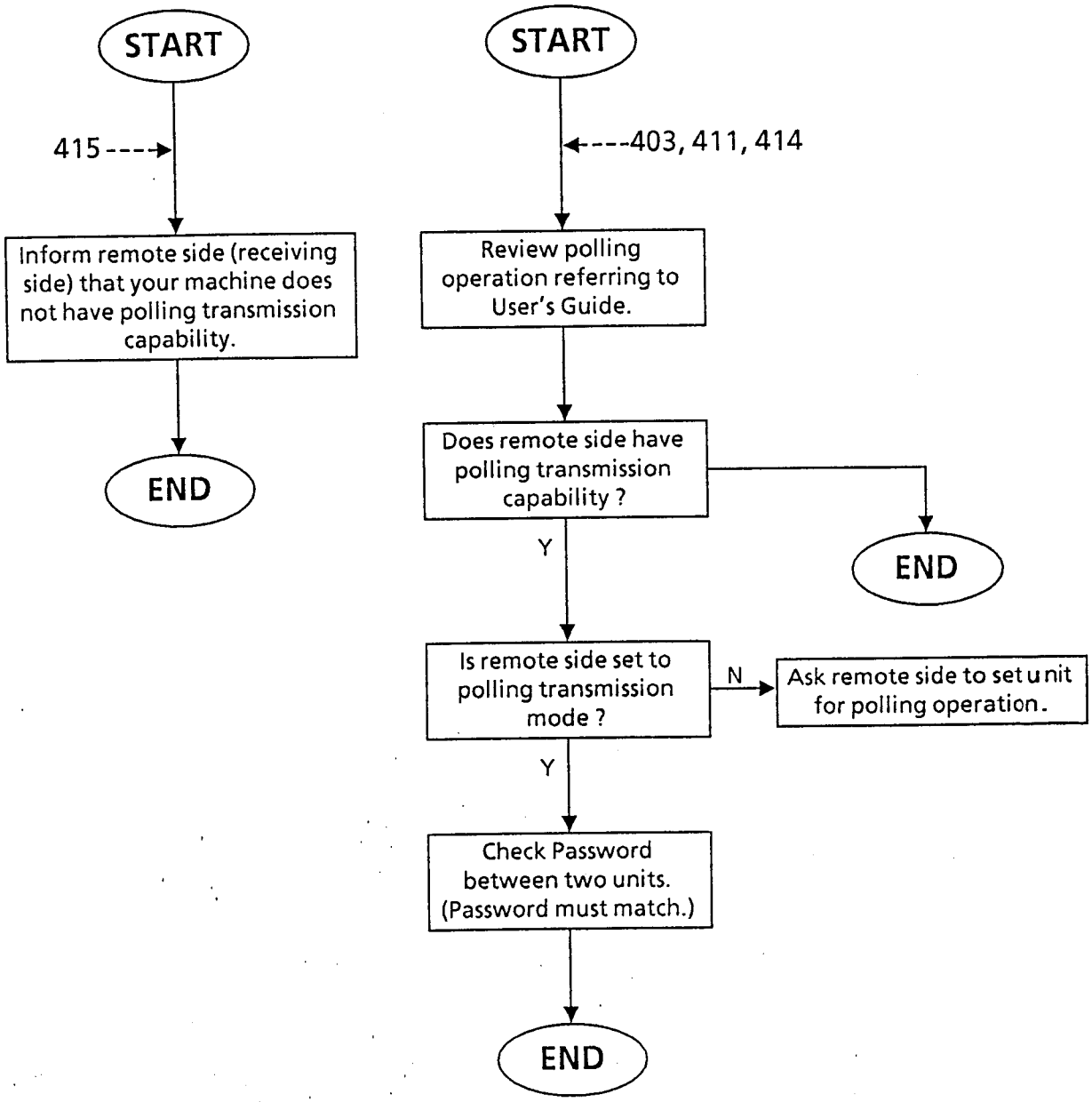
4.10 Printed Copy Quality Poor


START
Perform Pattern Test. (Test Mode 0)
Is printed pattern correct ?
N
① Check Print Cartridge. (Replace Print Cartridge or clean the contacts)
② Check paper quality. (Try different brand paper)
③ Check power at Controller PCA (CN2P, J6 and cable)
④ Check Flex Head Cable and contacts.
⑤ Replace Controller PCA.
Y
Make local copy.
Is printed copy correct ?
N
Check transmission block. (CN7, 8, 12, 13, 14, JA1, JA2 FCBM PC Board)
Y
Perform receiving test with local fax unit.
Is received copy correct ?
N
Check CN2 and 10. Check line cord. Replace FCBM PC Board.
Y
Is poor copy printed when receiving from a specific transmitter?
N
Telephone line quality is poor. (Refer to 4.13.)
Y
Transmitter may be defective.
END

4.11 Dialing Error (INFO. Code: 630)



4.12 Polling Operation Trouble (INFO. Code:403, 411, 414, 415)

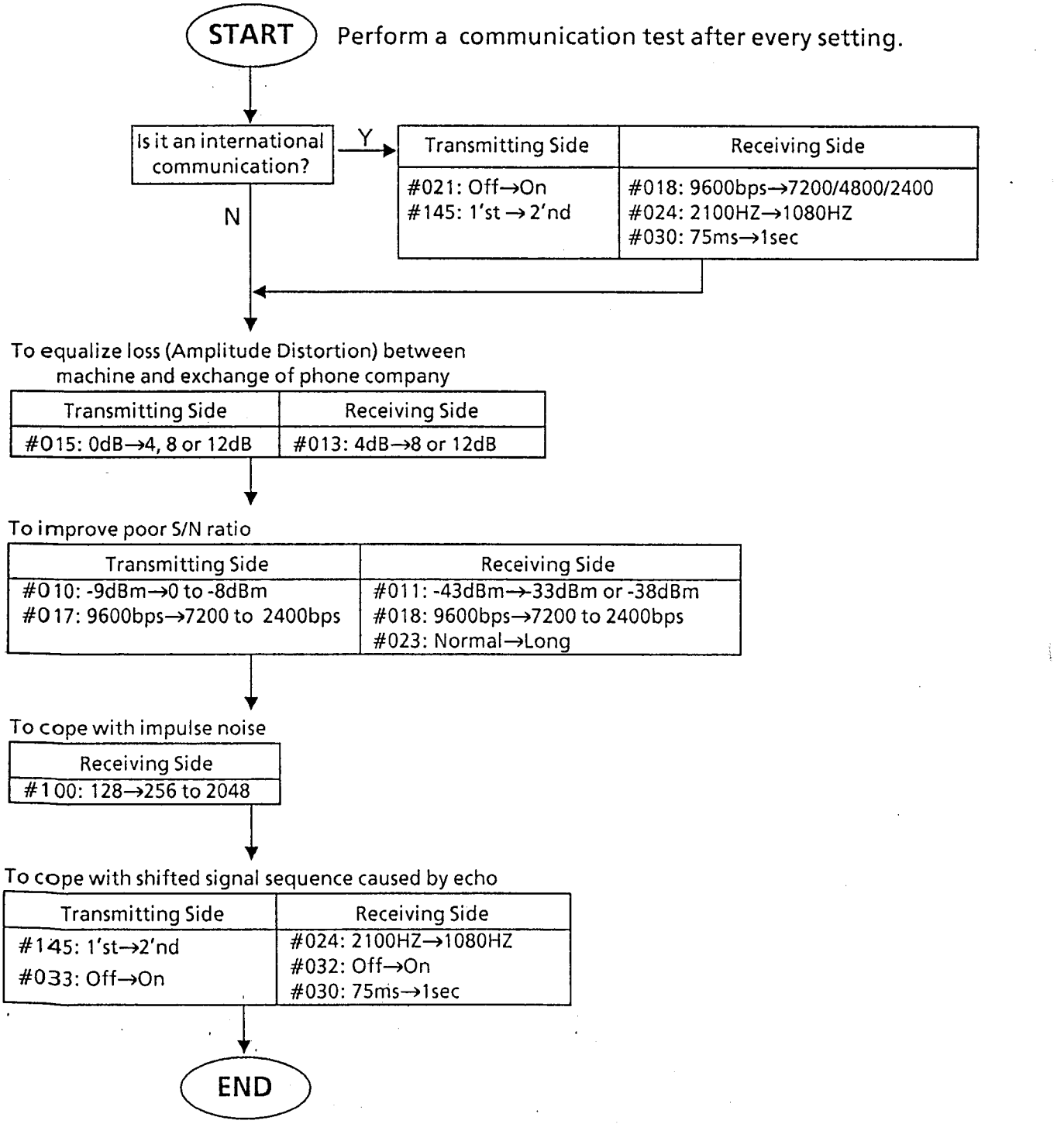

START
415
Inform remote side (receiving side) that your machine does not have polling transmission capability.
END
START
403, 411, 414
Review polling operation referring to User's Guide.
Does remote side have polling transmission capability ?
Y
END
Is remote side set to polling transmission mode ?
N
Ask remote side to set unit for polling operation.
Y
Check Password between two units. (Password must match.)
END

Polling communication with 4-digit password is a Non CCITT Standard feature. If the manufacturer is different between transmitter and receiver, polling communication with password may not be available.

4.13 Communication Trouble

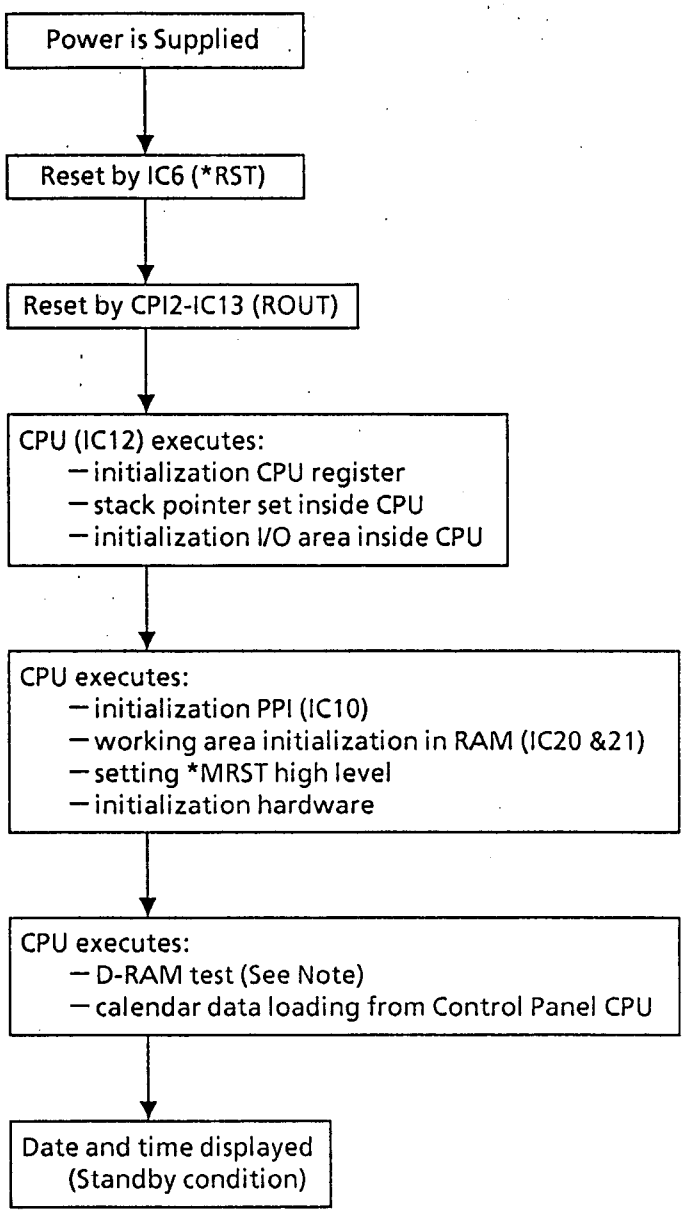
This section explains general trouble shooting procedures for the 400 series of Information Codes. The 400 numbers are mostly caused by poor telephone line quality such as loss, noise, echo etc. This machine is furnished with Test mode 1 to minimize problems caused by poor line quality.

It is preferable that not only the transmitting machine but also the receiving machine be adjusted. This section gives relevant parameters in Test mode 1 for both the transmitting and receiving side. Should no improvement be found after the parameters are adjusted, it is recommended that the parameters be set back to the default position.



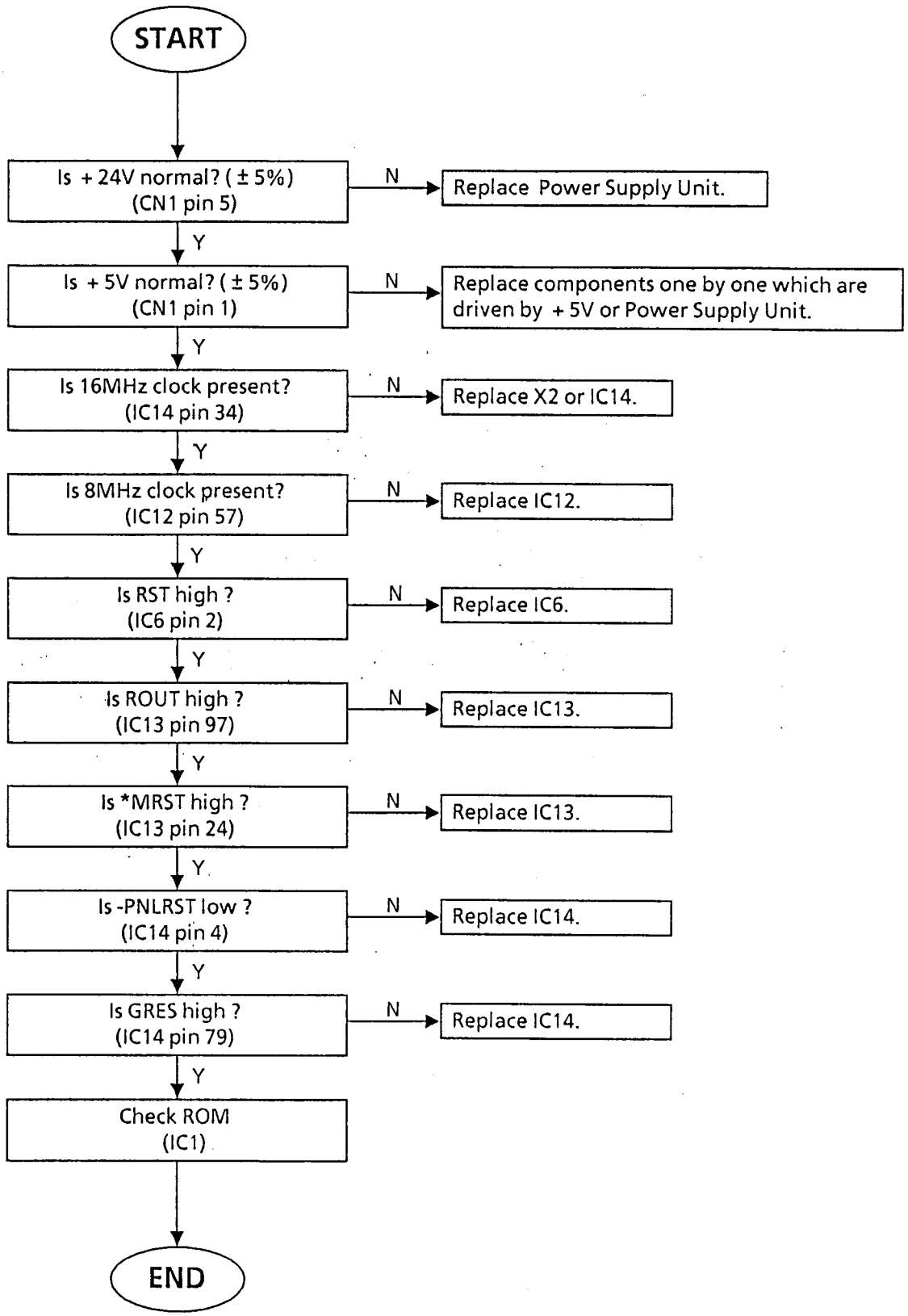
4.14 FCBM PC Board Defective

4.14.1 Initialization Sequence (Power On to Date/Time display)

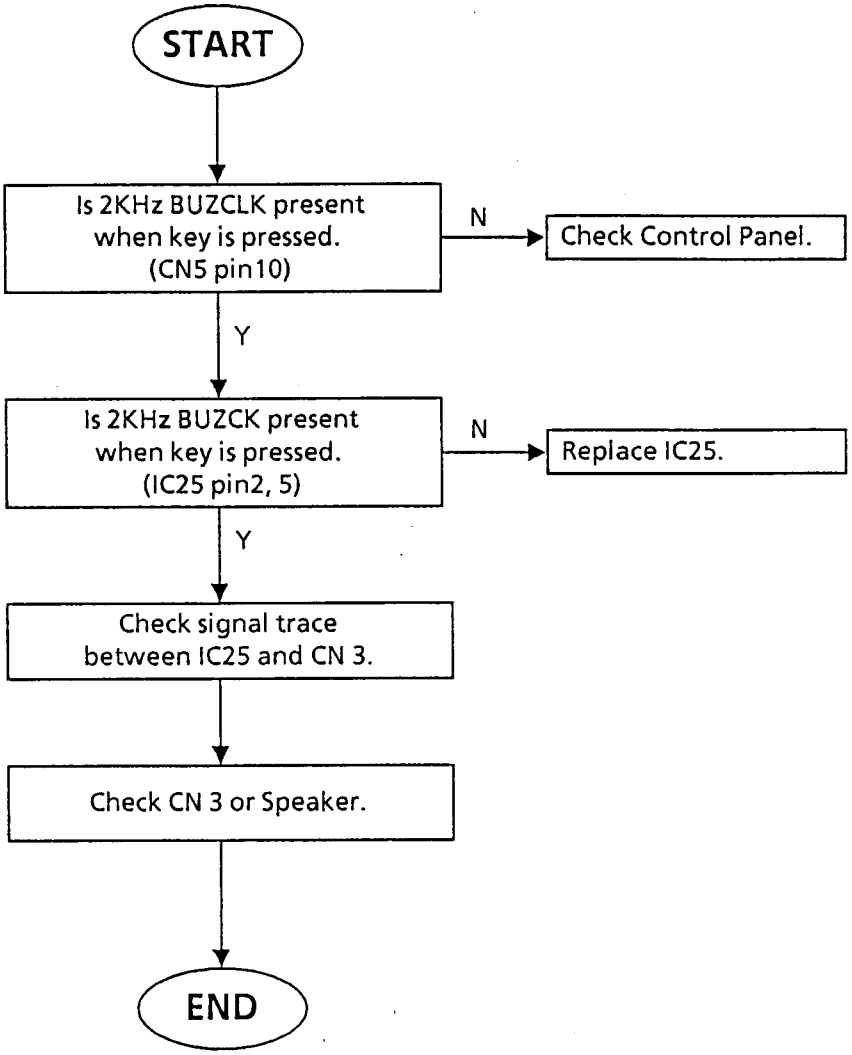

Power is Supplied
Reset by IC6 (*RST)
Reset by CPI2-IC13 (ROUT)
CPU (IC12) executes:
— initialization CPU register
— stack pointer set inside CPU
— initialization I/O area inside CPU
CPU executes:
— initialization PPI (IC10)
— working area initialization in RAM (IC20 &21)
— setting *MRST high level
— initialization hardware
CPU executes:
— D-RAM test (See Note)
— calendar data loading from Control Panel CPU
Date and time displayed
(Standby condition)

Note: UF-311 shows "0000000000" on display.
UF-312 shows "PLEASE WAIT" on display.

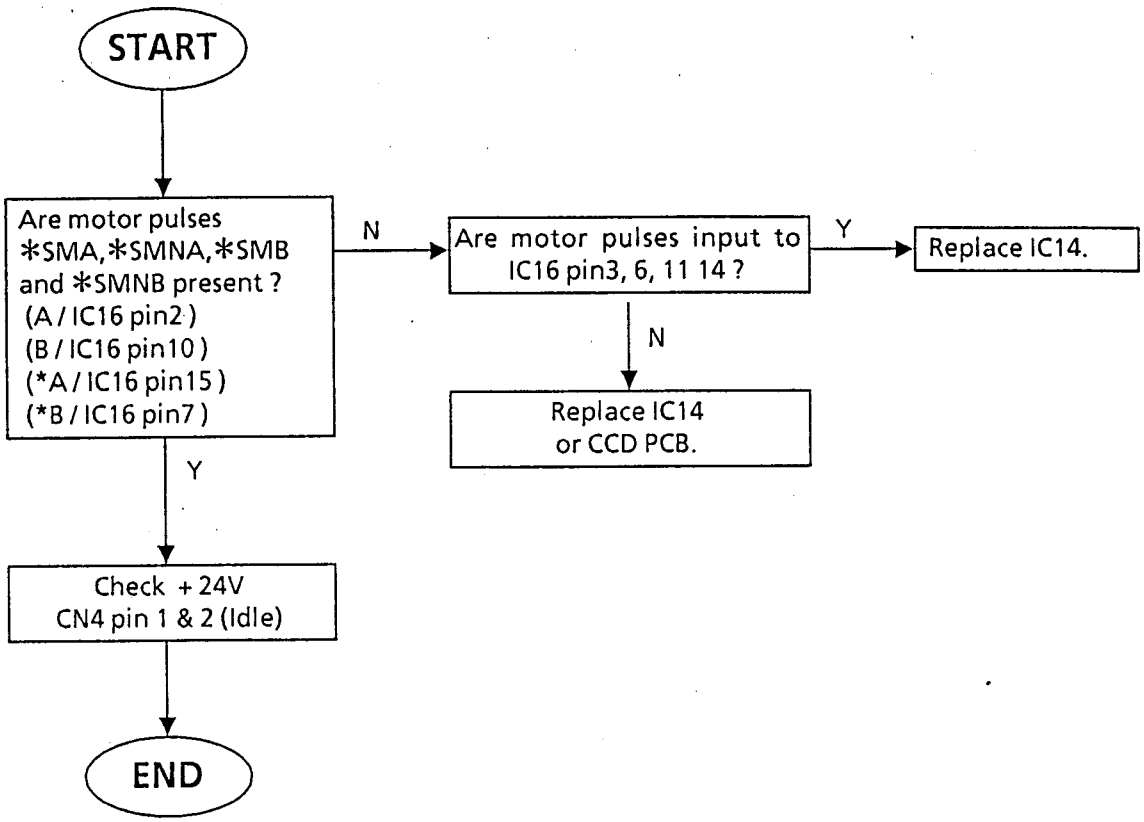
4.14.2 Initialization Not Completed



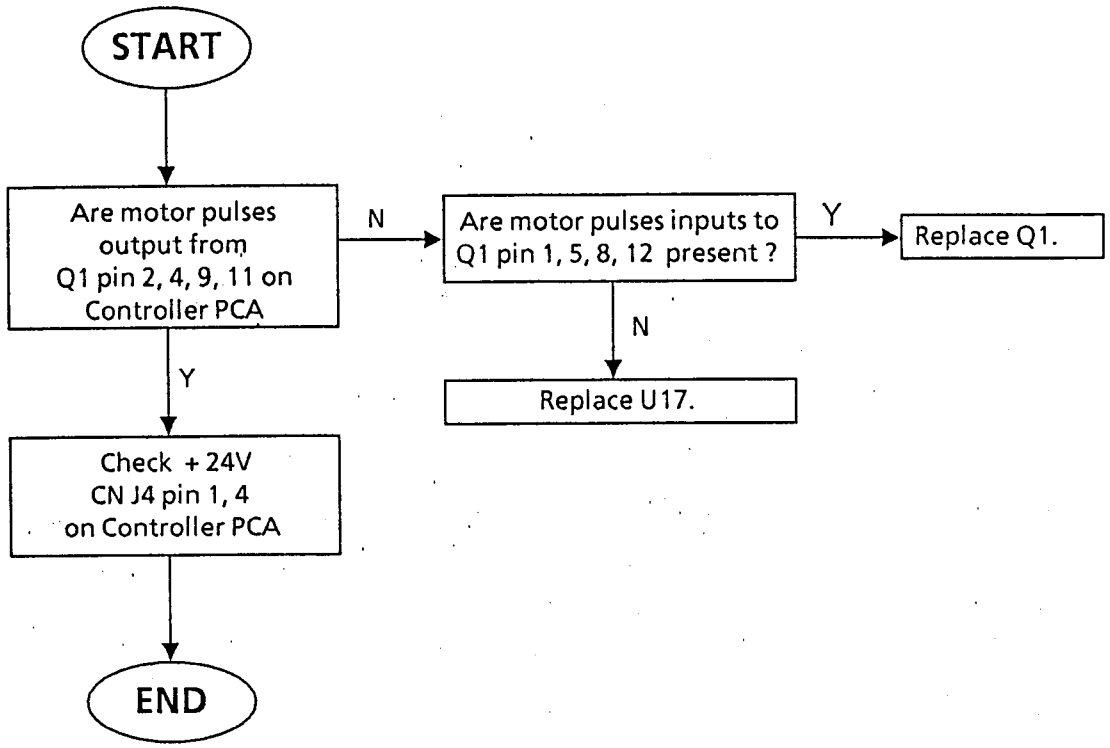
4.14.3 No Key Tone



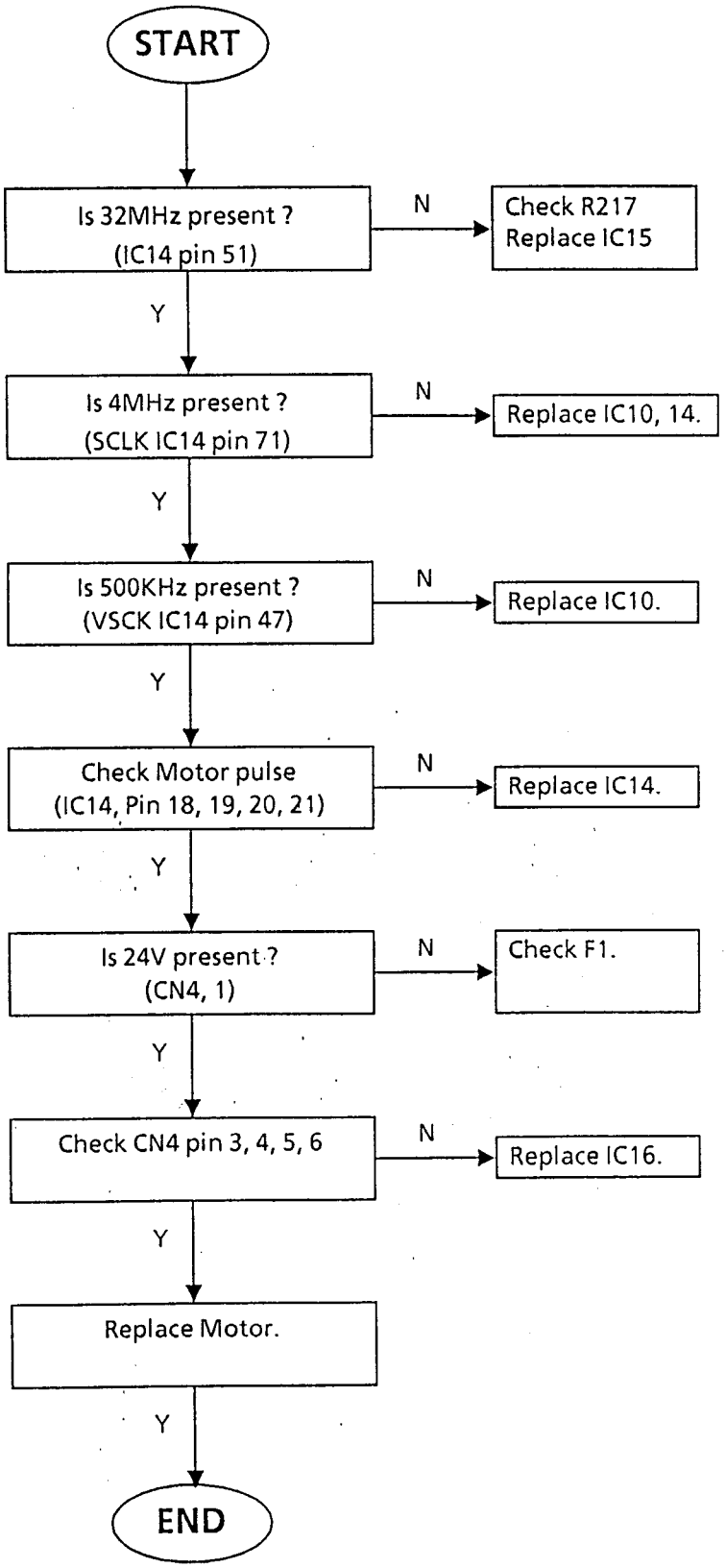
4.14.4 Tx Motor Not Rotating



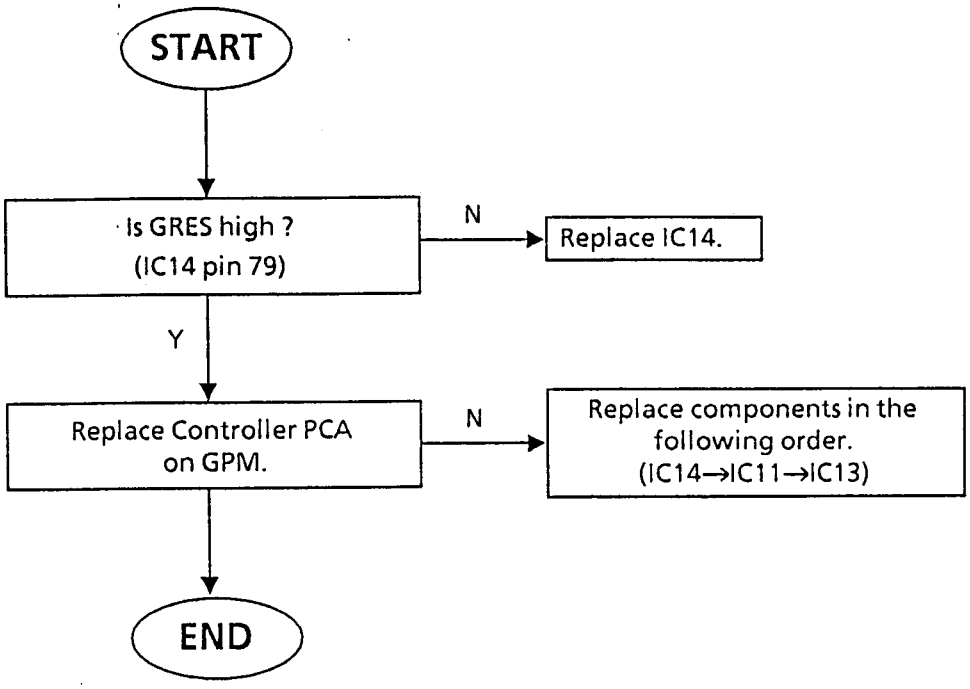
4.14.5 R_X Motor Not Rotating (See GPM Manual)


START
Are motor pulses output from Q1 pin 2, 4, 9, 11 on Controller PCA
N
Are motor pulses inputs to Q1 pin 1, 5, 8, 12 present ?
Y
Replace Q1.
N
Replace U17.
Y
Check + 24V CN J4 pin 1, 4 on Controller PCA
END

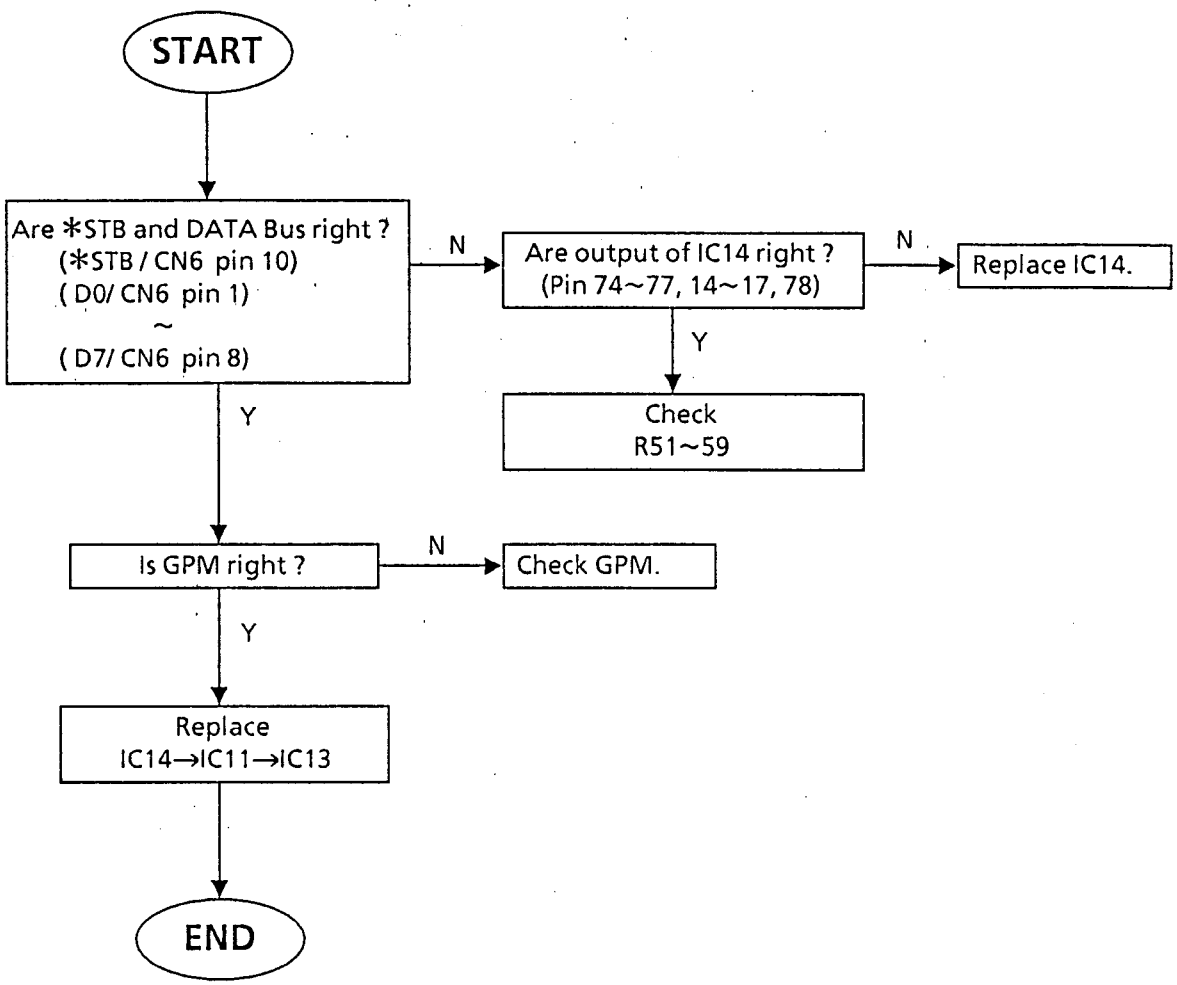
4.14.6 Document is not Scanned



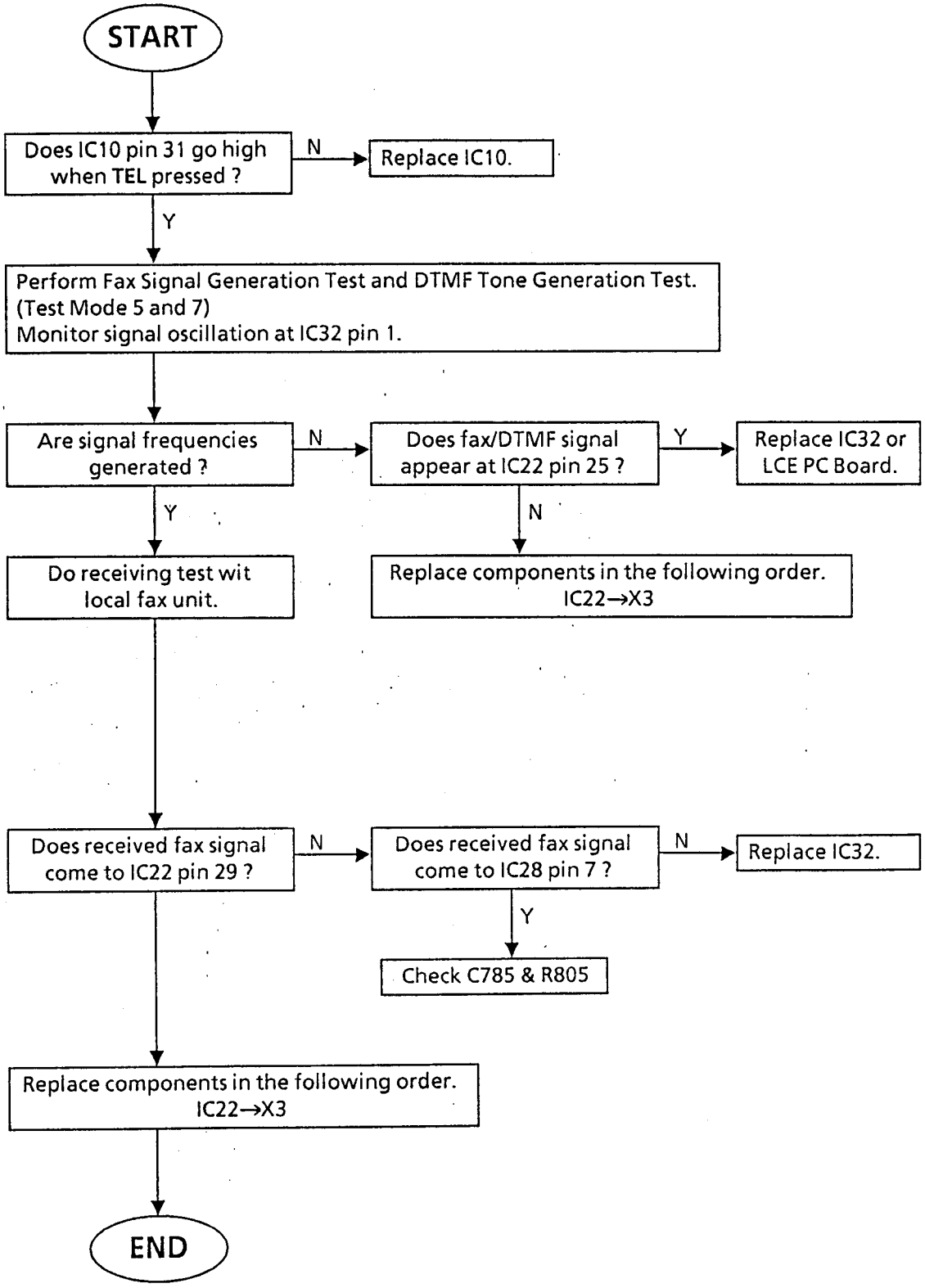
4.14.7 Printing not starting (See GPM Manual)



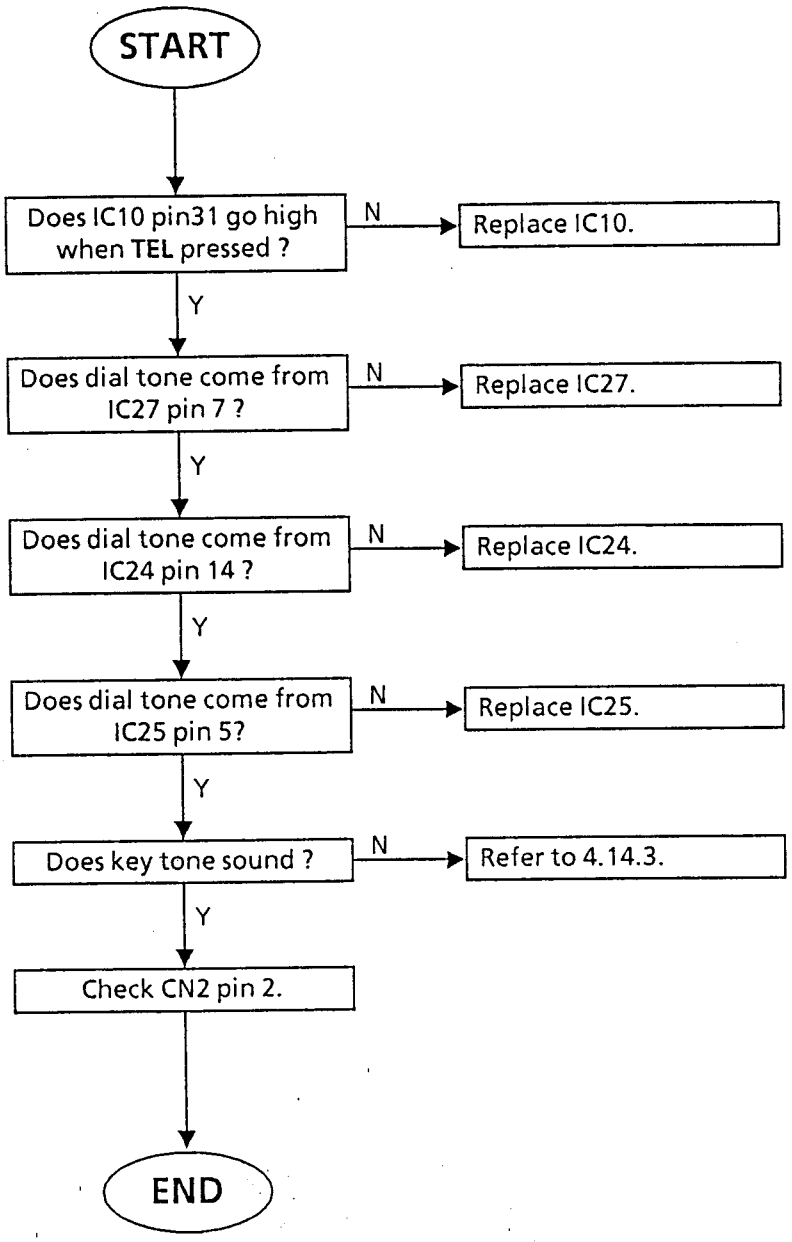
4.14.8 Printed Copy Abnormal



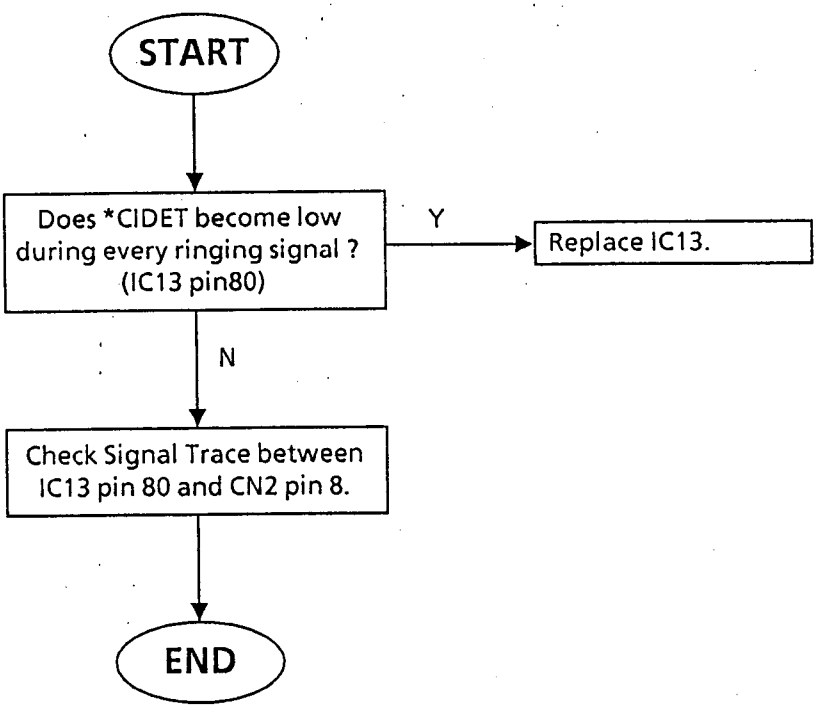
4.14.9 Communication Trouble (including Dialing Trouble)


START
Does IC10 pin 31 go high when TEL pressed ?
N
Replace IC10.
Y
Perform Fax Signal Generation Test and DTMF Tone Generation Test.
(Test Mode 5 and 7)
Monitor signal oscillation at IC32 pin 1.
Are signal frequencies generated ?
N
Does fax/DTMF signal appear at IC22 pin 25 ?
Y
Replace IC32 or LCE PC Board.
Y
N
Do receiving test wit local fax unit.
Replace components in the following order.
IC22→X3
Does received fax signal come to IC22 pin 29 ?
N
Does received fax signal come to IC28 pin 7 ?
N
Replace IC32.
Y
Check C785 & R805
Replace components in the following order.
IC22→X3
END

4.14.10 Monitor Not Functioning



4.14.11 Auto Receiving Trouble


START
Does *CIDET become low during every ringing signal ? (IC13 pin80)
Y
Replace IC13.
N
Check Signal Trace between IC13 pin 80 and CN2 pin 8.
END

4.15 Information Code Table

Information Code Table

Code	Mode	Phase	Description of Problem	Cause
001	RCV COPY	C D	Leading edge of the recording paper fails to reach the OOP sensor.	Recording Paper : JAM OOP Sensor : abnormal
002	RCV COPY	C D	Tail edge of the recording paper fails to reach the OOP sensor.	Recording Paper : JAM OOP Sensor : abnormal Connectors : Not firmly connected
010	RCV COPY	B C	No recording paper.	No recording paper or paper is not set properly. Recording Paper Sensor is defective or it is not mounted properly.
014	RCV COPY	--	Print Cartridge is not installed.	
015	RCV COPY	--	Out of Ink.	
030	XMT	B	Read point Sensor does not go On within 10 seconds after document starts feeding.	Document is not set properly. Defective Read Point Sensor
031	XMT COPY	C	Transmitting document was longer than 2,000 mm (or 78.7 inches).	Document gets jammed. RPS Sensor is defective.
039	Idle	--	Unit has a document in ADF.	When storing a document into memory, if pressing STOP key before B point sensor activates, this code will be shown.
060	—	A	Receiving Cover was open.	Cover is not firmly closed/fixed. Connectors are not firmly connected.
061	—	A	Transmitting Cover was open.	Cover is not firmly closed/fixed. Connectors are not firmly connected.
211	XMT	C	Transmission of the data from modem was stopped.	Modem is defective.
212	XMT RCV	A~E	Interface error occurred between CPU and Modem.	
220	RCV	C	Receiver could not detect RTC at end of phase-C.	Line quality is poor. (RTC is distorted due to line noise)
221	RCV COPY		Interface error occurred between CPU and GPM.	
301	XMT RCV		System fault	Software trouble occured
310 311	RCV COPY	--	GPM (printer) error.	
320	--	--	E^2PROM Write error. This code is effective except for N.A..	E^2PROM or the peripheral circuit is defective.
321	--	--	GPM interface error.	May be disconnected connector
331	XMT	C	8 minutes timer error. This code is for Germany only.	

4.15 Information Code Table

Information Code Table

Code	Mode	Phase	Description of Problem	Cause
400 401	XMT	B	T1 timer (35 ± 5 sec.) elapsed without detecting 300bps signals.	Wrong number is dialed and START button is pressed. Telephone line is disconnected in the course of dialing. FCB (Modem) or LCE is defective. Receiver is defective. (It may transmit only CED.)
402	XMT	B	DCN was returned from receiver when transmitter waits for NSF/DIS.	Receiver might work in non-CCITT mode only. There is incompatibility.
403	RCV (POLLING)	B	Transmitter had no polling function.	"POLLED = ON"(polling XMT ready) is not set at transmitter. Document to be transmitted is not placed at transmitter.
404	XMT	B	Transmitter sent NSS (or DCS) followed by TCF three times but receiver did not respond. (CFR or FTT is usually returned.)	Receiver is defective. (Modem, LCE etc.) FCBM (Modem) or LCE is defective. Receiver disconnects line during first NSS (or DCS) transmitted.
405	XMT	B	Transmitter received FTT after it transmitted TCF at 2400bps.	Line quality is poor. (TCF is damaged due to line noise.) Receiver is defective. (Modem, LCE etc.) FCBM (Modem) or LCE is defective.
407	XMT	D	Transmitter received no response after it transmitted post message such as EOP, MPS, EOM etc.	Receiver is defective. (no paper, paper jamming etc.) Receiver ceased receiving because of excessive error. (Line quality is poor.) FCBM (Modem) or LCE is defective.
408	XMT	D	Transmitter received RTN after it transmitted EOP, MPS or EOM.	Receiver receives data with error. (Line quality is poor.) Receiver is defective. (Modem, LCE etc.) FCBM (Modem) or LCE is defective.
409	XMT	D	Transmitter receives PIN after it transmitted a post message such as EOP, MPS, EOM etc.	Receiver receives data with error due to poor line quality,and receiving operator requests voice contact. Receiver is defective. (Modem, LCE etc.) FCBM (Modem) or LCE is defective.
410	300 BPS RCV	B D	Invalid command received.	Interface : faulty Line : faulty
411	RCV (polling)	B	T1 timer (35 ± 5 sec.) elapsed without detecting any signal after it transmitted NSC (or DTC).	Transmitter is not ready for polling comm. Password does not match between transmitter and receiver.

4.15 Information Code Table

Information Code Table

Code	Mode	Phase	Description of Problem	Cause
412	G3 RX	B D	No response within 12 seconds in NSS/DCS/MPS wait state. (After transmitting FTT, MCF or CFR)	Transmitter is defective. FCBM is defective.
414	RCV (polling)	B	Receiver (calling side) received DCN after it transmitted NSC (or DTC).	Password does not match between transmitter and receiver. Transmitter is defective. (no document, document jamming etc.)
415	XMT (polling)	B	Remote side attempted to receive message from your machine in polling communication. "Inform remote side that your machine does not have the polling transmission feature."	
416	RCV	D	Receiver did not detect post command such as EOP etc.	Transmitter is defective. Line quality is poor. (RTC signal is distorted due to line noise.) FCBM (Modem) or LCE is defective.
417	RCV	C	Receiver returned RTN in response to post message.	Line quality is poor. (There are excessive errors in receiving data.) FCBM (Modem) or LCE is defective.
418	RCV	C	Receiver transmitted PIN in response to PRI-Q from transmitter. (Transmitting operator requests voice contact.)	Line quality is poor. (There are excessive errors in receiving data.) FCBM (Modem) or LCE is defective.
420	RCV	B	T1 timer (35 sec.) elapsed without detecting 300bps signal. *(The 420 code is not displayed on panel.)*	There is an incoming wrong call. (not for facsimile comm.) Transmitter is defective. FCBM (Modem) or LCE is defective.
421	RCV	B	T1 timer (35 sec.) elapsed without detecting 300bps signal, after receiver receives EOM (End Of Message).	Transmitter is defective.
422	XMT	B	Content of NSF (or DIS) or NSC (or DTC) was not valid.	There is incompatibility.
427	G3 RCV	B	DCN received to NSF / CSI / DIS transmitted.	Interface : incompatible
434	XMT or RCV	B	CD (response from Modem) did not turn OFF within 180 sec.after receiver detected FLAG signal.	Remote unit is defective. FCBM (Modem) or LCE is defective.
436	G3 RX	C	DCN reception in Phase-C waiting state, or received to FTT transmitted.	Transmitter is defective or incompatible. Line quality is poor.
459	RCV	C	Receiver could not complete training sequence within 10 sec. in beginning of Phase C.	Line quality is poor. (Training signal is distorted due to line noise.) FCBM (Modem) or LCE is defective.
490	RCV	C	Sum of error line exceeded the limit (parameter 012) by 64 lines.	Line quality is poor. FCBM (Modem) or LCE is defective.

4.15 Information Code Table

Information Code Table

Code	Mode	Phase	Description of Problem	Cause
494	RCV	C	Interval between two EOLs was more than 10 sec. when receiver received message data.	Transmitter is defective. Line quality is poor. (EOL is damaged due to line noise.) FCB (Modem) or LCE is defective.
495	RCV	C	CD turned OFF during receiver received message data.	Line is disconnected. Transmitter is defective. FCBM (Modem) or LCE is defective.
496	XMT	C	CS of modem is not be able to turn ON.	FCBM (Modem) is defective.
497	XMT	B	CS of modem is not be able to turn ON during training.	FCBM (Modem) is defective.
540	XMT	B	DCN received to NSF / CSI / DIS transmitted.	Interface : incompatible
541	XMT	D	No response to the 3rd CTC transmitted.	Line : faulty LCE, MODEM : abnormal
542	XMT	D	No response to the 3rd RR transmitted.	A remote unit : abnormal
543	XMT	D	T5 seconds elapsed without MCF.	A remote unit : abnormal
544	XMT	D	Stopped Transmission after EOR Transmission.	Line : faulty LCE, MODEM : abnormal
554	RCV	D	DCN received after ERR Transmission.	Line : faulty
555	RCV	D	PIN transmitted on ADF in auto dial transmission.	Line faulty and Operator Call requested by RX side.
570	RCV	B	Password or machine code did not match during remote diagnostic communication.	
571	XMT	B	Remote unit did not have the remote diagnostic function.	
572	XMT	c	There was no responce while machine transmitted the data during remote diagnostic communication.	Remote unit is defective.
573	RCV	c	Unit could not receive the data from remote unit during remote diagnostic communication.	Remote unit is defective.
601	XMT		ADF door was opened during On-hook transmission	
623	XMT	B	No document was on document feeder. (built-in dialer engaged.)	Operator removes document from document feeder after dialing is completed. Document is not properly placed on document feeder.

4.15 Information Code Table

Information Code Table

Code	Mode	Phase	Description of Problem	Cause
630	XMT or RCV (polling)	B	Redial count over and busy tone detected.	Dial tone is not detected. Second dial tone is not detected. (depending on country) Busy tone is detected. (depending on country) T1 timer (35 ± 5 sec.) elapsed without signal from receiver.
631	XMT	A	"STOP" button was pressed during Auto Dialing.	
634	XMT		Redial count over with no response.	
638	XMT		Power turned off with applicable data in memory or during communication.	Power switched off Power Failure occurred.
640	XMT RCV		Hook off detected after communication.(for UF-311 only)	
641	XMT		Line was busy after redialling to same station continually. (This code is effective except for N.A.)	
870	Mem. XMT Multi-copy		Memory overflow.	
879	Mem. RCV		Memory overflow during memory reception.	
962				Software bug
975	Initial test		Memory parity error.	

4.16 Diagnostic Code

The 13-digit Diagnostic Code is provided for the service engineer to analyze how the communication was performed. The code is printed on the Journal.

Example of Journal

```
**************************-JOURNAL-********************** DATE 01-01-1992 ***** TIME 09:30 *****

  NO.   COM.   PAGES    FILE   DURATION   X/R   IDENTIFICATION   DATE    TIME   DIAGNOSTIC

  001   OK     001/001  001    00:00'42   XMT      123 456 789   SEP-01  09:20  C8064903C000
                                                                                 ↑          ↑
                                                                              1st digit  13th digit


*********************************************************************** -01234567890123456789-*******
```

[1st Digit] : Manufacturer Code

[2nd Digit]

Data	Definition			
	DCN	STOP Button	Voice Contact	Auto Dialer
0	—	—	—	—
1	received	—	—	—
2	—	pressed	—	—
3	received	pressed	—	—
4	—	—	requested	—
5	received	—	requested	—
6	—	pressed	requested	—
7	received	pressed	requested	—
8	—	—	—	Yes
9	received	—	—	Yes
A	—	pressed	—	Yes
B	received	pressed	—	Yes
C	—	—	requested	Yes
D	received	—	requested	Yes
E	—	pressed	requested	Yes
F	received	pressed	requested	Yes

— : Not used/defined

[3rd Digit]

Data	Definition			
	Receive Start	ID (TSI or CSI)	Polling TX in Turnaround Polling	
0	—	—	—	
1	automatic	—	—	
2	manual	—	—	
4	—	received	—	
5	automatic	received	—	
6	manual	received	—	
8	—	—	Yes	
9	automatic	—	Yes	
A	manual	—	Yes	
C	—	received	Yes	
D	automatic	received	Yes	
E	manual	received	Yes	

—: Not used/defined

[4th Digit]

Data	Definition			
	Relayed XMT	Short Protocol	Password XMT	Deferred Comm.
0	—	—	—	—
1	—	—	—	Yes
2	Yes	—	—	—
4	—	Yes	—	—
5	—	Yes	—	Yes
6	Yes	Yes	—	—
8	—	—	Yes	—
9	—	—	Yes	Yes
A	Yes	—	Yes	—
C	—	Yes	Yes	—
D	—	Yes	Yes	Yes
E	Yes	Yes	Yes	—

—: Not used/defined

[5th Digit]

Data	Definition			
	Polling RCV Mode	RCV Mode	XMT Mode	Turnaround Polling Mode
0	—	—	—	—
1	Yes	—	—	—
2	—	Yes	—	—
3	—	—	—	—
4	—	—	Yes	—
8	—	—	—	Yes
9	—	—	—	—
A	—	Yes	—	Yes
B	—	—	—	—
C	—	—	Yes	Yes

— : Not used/defined

[6th Digit]

Data	Definition			
	ECM	G3/G3N-S	Memory COMM.	
0	—	—	—	
1	—	—	—	
2	—	—	—	
3	—	—	—	
4	—	G3 Standard	—	
5	Yes	G3 Standard	—	
6	—	G3 Standard	Yes	
7	Yes	G3 Standard	Yes	
8	—	G3 Nonstandard	—	
9	Yes	G3 Nonstandard	—	
A	—	G3 Nonstandard	Yes	
B	Yes	G3 Nonstandard	Yes	

— : Not used/defined

[7th Digit] : Always "0"

[8th Digit]

Data	Definition			
	Resolution	Coding		
0	—	—		
2	STD	MH		
3	STD	MMR		
4	FINE	MH		
5	FINE	MMR		
6	Super FINE	MH		
7	Super FINE	MMR		
8	—	—		
A	STD	MR		
C	FINE	MR		
E	Super FINE	MR		

— : Not used/defined

[9th Digit]

Data	Definition			
	Modem Speed	Polling		
0	2400bps	—		
1	2400bps	Yes		
4	4800bps	—		
5	4800bps	Yes		
8	7200bps	—		
9	7200bps	Yes		
C	9600bps	—		
D	9600bps	Yes		

— : Not used/defined

[10th Digit]

Data	Definition			
	Scanning Rate			
0	20 msec/line			
1	5 msec/line			
2	10 msec/line			
4	40 msec/line			
7	0 msec/line			

— : Not used/defined

[11th Digit] : Always "0"

[12th Digit]

Data	Definition			
	Confidential Comm.	RTN Receive		
0	—	—		
1	Yes	—		
8	—	Received		
9	Yes	Received		

[13th Digit] : Always "0"

Chapter 5
Test Modes

5.1 Test Mode Table 5-2
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5.3 Test mode No.1 (Function Parameter Setting) 5-5
- Function Parameter Table 5-6
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5.7 Test mode No.6 (RAM Initialization) 5-20
5.8 Test mode No.7 (DTMF Signal Generation) 5-21
5.9 Test mode No.9 (D-RAM Test) 5-22
5.10 Test mode No.10 (LED / LCD / CCD Test) 5-23

5.1 Test Mode Table

The following test modes are provided to assist you in setting various functions that effect the operation of the unit and to run tests that will help you determine the condition of the unit.

TEST MODE TABLE

Test Mode No.	Test Mode	Description
0	Test Pattern Printout	Prints out a test pattern to check the thermal inkjet recording head.
1	Function Parameter Setting	Changes the function parameters such as the home position and various other functions.
2	Not used	
3	Function Parameter List Printout	Prints out a list of all function parameters.
4	Binary Signal Generation	Generates various binary signals.
5	Tonal Signal Generation	Generates various tonal signals.
6	RAM Initialization	Initializes RAM and store the default value of the function parameters.
7	DTMF Signal Generation	Generates various DTMF signals.
8	Not used	
9	RAM Test (Doc. MEM. Test)	Checks the Document Memory RAM.
10	LED, LCD and CCD Test	Checks the LED, LCD and CCD.

5.2 Test Mode No. 0 (Test Pattern Printout)

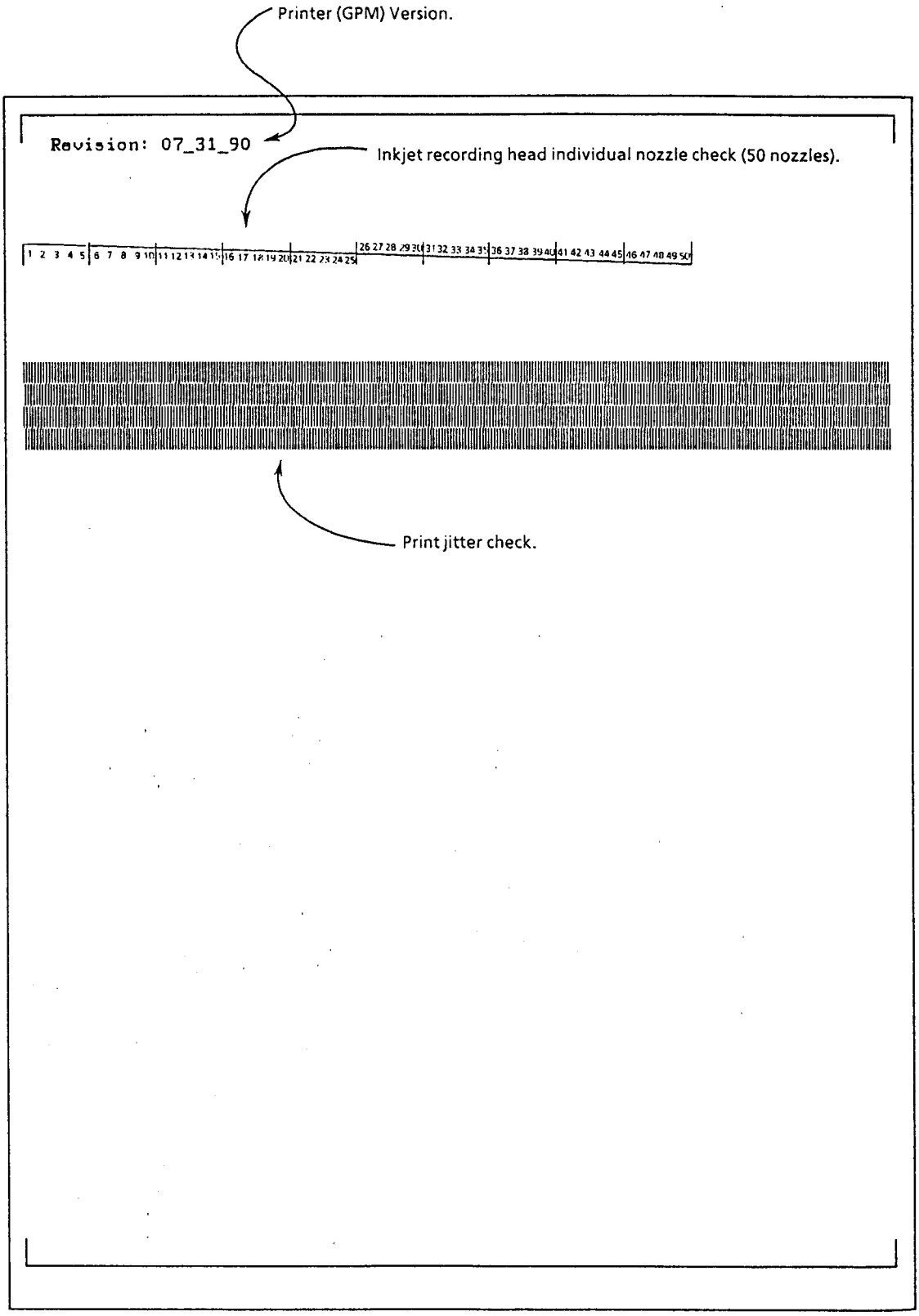
A test pattern can be printed out to check the receiving mechanism especially the thermal inkjet recording head. Refer to the following procedure.

Test Pattern Printout

Step	Operation or unit condition	LCD display
1	Standby	12-12-1991 12:00
2	Press "#" (SET).	-
3	Press"TEL/DIAL" four times and "*".	-
4	Press "0" and "START".	12-12-1991 12:00
5	After printing is completed, the unit returns to the display in step 3.	-
6	Press "stop" to return to standby.	12-12-1991 12:00

NOTE: Refer to the sample copy of test pattern on the next page.

Sample Test Pattern Print



5.3 Test Mode No.1 (Function Parameter Setting)

If necessary, change the function parameters using the following procedures.

Function Parameter Setting

Step	Operation or unit condition	LCD display
1	Standby	12-12-1991 12:00
2	Press "#" (SET).	-
3	Press"TEL/DIAL" four times and "*".	-
4	Press "1" and "START".	000 [ ] -
5	Enter the Function Parameter Number. EX: Changing "MONITOR" Setting. Enter "1 1 6".	116 [01] - 01
6	Enter the new setting value. EX: Enter "02" for On.	116 [01] - 02
7	Press "START". The new value will be stored and next parameter will be displayed.	117 [01] - 01
8	Repeat steps 5 through 8 to change another Function Parameter or Press "STOP" twice to return to standby.	12-12-1991 12:00

NOTE: The number inside the brackets is the default setting and the number on the right is the current setting.

Function Parameter Table

No.	Parameter [Default value]	Function	Selections
000 ~ 003	Not used		
004	NUMERIC ID SET:[2:On]	Selects whether or not the machine accepts to set or change Numeric ID.	"1" = Off (will not accept) "2" = On (accepts)
005	LANGUAGE: [06:Q's English]	Selects language. (Used to improve manufacturing productivity)	"01" = English "02" = Canadian French "03" = French "04" = German "05" = Swedish "06" = Queen's English "07" = Italian "08" = Portuguese "09" = Spanish "10" = Norwegian "11" = Dutch "12" = Danish "13" = Finnish
006 007	Not used		
008	MEM-STORED STAMP:[1:Off]	Selects if the machine stamps when storing the documents into memory or not.	"1" = Off (does not stamp) "2" = On (stamps)
009	RCV MODE: [2:Fax]	Selects receiving mode Tel, Fax or Auto Switching.	"1" = Telephone "2" = Fax "3" = Auto Switching
010	TX LEVEL: -[9] dBm	Selects signal output level, 0 to -15 dBm in 1dB steps.	"00" = 0dBm · · "15" = -15dBm
011	RX LEVEL: [1:-43dBm]	Selects receiving sensitivity of -33 / -38 / -43 / -48 dBm.	"1" = -43dBm "2" = -38dBm "3" = -33dBm "4" = -48dBm
012	DTMF LEVEL: -[8] dBm	Selects DTMF output level, 0 to -15 dBm in 1 dBm steps.	"00" = 0dBm · · "15" = -15 dBm
013	G3 RX EQL: [2:4dB]	Selects cable equalizer in G3 reception mode, 0 / 1.8 / 3.6 / 7.2 Km.	"1" = 0 dB "2" = 4 dB "3" = 8 dB "4" = 12dB
014	Not used		
015	G3 TX EQL: [1: 0dB]	Selects cable equalizer in G3 transmission mode, 0 / 1.8 / 3.6 / 7.2 Km.	"1" = 0 dB "2" = 4 dB "3" = 8 dB "4" = 12dB
016	Not used		
017	TX START: [4:9600bps]	Selects transmission modem start speed, 9600/7200/ 4800/2400 bps.	"1" = 2400bps "2" = 4800bps "3" = 7200bps "4" = 9600bps

Function Parameter Table

No.	Parameter [Default value]	Function	Selections
018	RX START: [4: 9600bps]	Selects receiving modem start speed, 9600/7200/4800/2400 bps.	"1" = 2400bps "2" = 4800bps "3" = 7200bps "4" = 9600bps
019 020	Not used		
021	EP TONE: [1:Off]	Selects echo protect tone on V.29 mode, On (add) or Off (not add).	"1" = Off (without EP tone) "2" = On (with EP tone)
022	SIG. INTERVAL: [3:500ms]	Selects time interval between receiving signal and transmitting signal.	"1" = 100ms "2" = 200ms "3" = 500ms
023	TCF CHECK: [1:Normal]	Selects TCF check interval Long/Short.	"1" = Normal (Short) "2" = Long
024	CED FREQ.: [2:2100Hz]	Selects CED frequency 2100/1080Hz.	"1" = 1080Hz (non CCITT) "2" = 2100Hz
025	Not used		
026	NON-STANDARD: [2:On]	Selects own mode(Panafax mode).	"1" = Off (Invalid) "2" = On (Valid)
027	SHORT PROTOCOL: [2:On]	Selects short protocol mode.	"1" = Off (Invalid) "2" = On (Valid)
028	Not used		
029	REMOTE DIAG. : [2:On]	Selects whether or not the machine accepts Remote Diagnostics from the service station.	"1" = Off (will not accept) "2" = On (accepts)
030	CED & 300bps: [1:75 ms]	Selects blank time between CED and 300 bps signal.	"1" = 75ms "2" = 1sec
031	RTC = EOL x 12:[1:Off]	Selects RTC signal, EOL x 6 or EOL x 12.	"1" = Off (EOL x 6) "2" = On (EOL x 12)
032	CSI TRANSMIT : [2:On]	Selects transmit CSI signal.	"1" = Off (not transmitted) "2" = On (transmitted)
033	TSI TRANSMIT : [2:On]	Selects transmit TSI signal.	"1" = Off (not transmitted) "2" = On (transmitted]
034	CIG TRANSMIT : [2:On]	Selects transmit CIG signal.	"1" = Off (not transmitted) "2" = On (transmitted)
035 \ 037	Not used		
038	D-TONE DET. COUNT:[1]	Selects the number of effective times for PAUSE key to detect dial tone.	"01" = 1 time \ "15" = 15 times
039	ON-HOOK DIAL:[2:On]	Selects On-hook dial mode.	"1" = Off (Invalid) "2" = On (Valid)
040	LINE AS PRINT'G : [1:Ring]	When the machine is in printing status, selects if the machine makes busy or rings when the machine is called.	"1" = Ring "2" = Busy
041	AT COVER OPEN : [2:Error]	When the machine is printing status, selects whether or not the machine stops printing if Printer Cover is opened.	"1" = Ignore (does not stop printing) "2" = Error (stops printing)

Function Parameter Table

No.	Parameter [Default value]	Function	Selections
042	PHONE CALL:[2:Answer] (For Hong Kong only.)	Selects whether or not unit answers the primary ringer.	"1" = Ignore "2" = Answer
043	REDIAL INTERVAL: [3] min	Selects redial interval, 0 to 15 minutes in one minute steps.	"0" = no waiting : "15" = 15 minutes
044	REDIAL COUNT: [3]	Selects redial count 0 to 15 times in one step intervals.	"0" = no redial : "15" = 15 times
045	RING DET. COUNT: [1]	Selects ring detect count 1 to 9 times in one step intervals. TAM I/F mode ring detect count is set by No.177.	"1" = 1 ring : "9" = 9 rings
046	ON-HOOK TIME: [60] sec	Selects on-hook time between sequential communication calls in 1 second steps.	"0" = 0 sec : "90" = 90 sec
047	DIAL START:[2:Tone det]	Selects either unit waits to redial or starts dialling after the preset pause time (parameter no. 077 /PAUSE TIME) elapse. This parameter relates with parameter no. 078 and 150.	"1" = Timer (starts dialling) "2" = Tone det (waits to redial)
048	EXT.TEL DIAL: [1:Invalid]	Selects if key pad dial is available or not when external phone is off hook.	"1" = Invalid "2" = Valid
049	Not used		
050	JNL PRINT: [2:Auto print]	Selects if the machine prints out a Journal automatically after every 32 transactions. Same function as fax parameter No.18.	"1" = Off (manual print) "2" = Auto print
051	Not used		
052	COMM. JNL: [2:On]	Selects home position of printing Comm. Journal. Same function as fax parameter No.05.	"1" = Off (not print) "2" = On (always prints) "3" = Inc (prints only when comm. error occurs)
053	Not used		
054	POW. FAIL REPORT: [1:Off]	Selects if the machine prints Power Failure Report even ADF TX and Comm. Journal = Off. In other case, machine prints Power Failure Report regardless of this setting.	"1" = Off (not print) "2" = On (always prints)
055 ~ 058	Not used		
059	COMM. STOP JNL: [1:Off]	Selects if the machine prints a Comm. Journal when STOP is pressed.	"1" = Off (according to Fax Para No.05 setting) "2" = On (always prints)
060	VERSION:	Indicates FCBM ROM version.	
061	TX/RX/COPY COUNTER:	Indicates transmitted, received and copied document count. Press "TEL" to display changes TX→RX→COPY.	TX/RX/COPY
062	Not used		

Function Parameter Table

No.	Parameter [Default value]	Function	Selections
063	INK TEST: [2:On]	Selects if the machine performs ink test or not.	"1" = Off (not) "2" = On (performed)
064	DATA CROP: [2:On]	Selects if the machine crops oversized data in copy mode.	"1" = Off (no data crop) "2" = On (data crop)
065	HALF TONE LEVEL: [Nor]	Selects half tone contrast.	"1" = Normal "2" = Light "3" = Dark
066	FUNC PARA. PRINT	Print out Function Parameter List. Same function as Test Mode No.9.	
067 068	Not used		
069	RESPONSE TIME: [65] sec	Selects waiting response time after machine has dialed.	"1" = 1 sec. : "90" = 90 sec.
070	TAM I/F: [2:Connected]	Selects if TAM is connected or not. Same function as Fax Parameter No.10.	"1" = None "2" = Connected
071	FLASH KEY:[2:Flash]	Selects detecting method for dial tone if pressing FLASH key. This parameter relates with parameter no. 076.	"1" = Earth "2" = Flash
072	PSTN ACCESS CODE:[0]	Sets the PSTN Access Code. This parameter relates with parameter no. 076.	Entering the PSTN Access Code using 0 to 9, * and # (up to 4 digits)
073	TEL. TYPE[1:Normal]	Selects pulse dial type Normal, Invert or + 1. Invert: Norway, New Zealand + 1: Sweden	1 = Normal 2 = Invert 3 = + 1
074	DIAL TYPE: [2:DTMF]	Selects dialing method using, DTMF or Pulse. Same function as Fax Parameter No.06.	"1" = Pulse (rotary) "2" = DTMF
075	PULSE RATE : [1:10pps]	Selects dial pulse rate 10/20 pps.	"1" = 10pps "2" = 20pps
076	CONNECT LINE:[1:PSTN]	Selects telephone line type PSTN or PBX. This parameter relates with parameter no. 076.	"1" = PSTN "2" = PBX
077	PAUSE TIME: [4] sec	Selects pause time 1sec ~ 10sec.	"1" = 1 sec. : "10" = 10 sec.
078	SWISS NEW DIAL: [1:Off] (For Switzerland only.)	Selects if the unit performs new dialling specified by Swiss PTT.	"1" = Off "2" = On
079	Not used		
080	DOC TOP FEED: [29] mm	Adjusting distance between scanning sensor ON position and scanning start position.	"00" = 00 mm : "99" = 99mm
081	DOC END FEED: [25] mm	Adjusting distance between scanning sensor OFF position and scanning end position.	"00" = 00 mm : "99" = 99mm

Function Parameter Table

No.	Parameter [Default value]	Function	Selections
082	TX-JAM LENGTH: [2:2m]	Selects jammed length at TX 1m/2m/Unlimited.	"1" = 1m "2" = 2m "3" = Unlimited
083 ⟆ 086	Not used		
087 088	LIGHT LEVEL: [4:4] NORMAL LEVEL: [2:2]	Selects each original contrast level. 0 ↔ 1 ↔ 2 ↔ 3 ↔ 4 ↔5 Dark← → Light	"0" = Darkest Original ⟆ "5" = Lightest Original
089	Not used		
090	HOME RESOL.: [1:Standard]	Selects home position of resolution. Same function as Fax Parameter No.01.	"1" = Standard "2" = Fine
091	HOME ORIGINAL: [1:Norm]	Selects home position of original . Same function as Fax Parameter No.02.	"1" = Normal "2" = Light "3" = Halftone
092	HOME STAMP : [1:Off]	Selects home position of verification stamp.	"1" = Off "2" = On
093 ⟆ 098	Not used		
099	VALID PAGE XMT: [2:On]	Selects to automatically delete document when memory overflows while storing document into memory.	"1" = Off (delete auto) "2" = On (send automati cally)
100	LINE ERROR: [1:128]	1. Selects line disconnect condition during reception. If number of line errors exceed this setting, unit will disconnect the line. 2. Selects transmit condition of RTP/PIP or RTN/PIN. (Available If No.103 ERROR DETECT is set to "LINES") (See Note 1)	"1" = 128 lines "2" = 256 lines "3" = 512 lines "4" = 1024 lines "5" = 2048 lines "6" = Off (Won't disconnect line)
101	TOTAL ERROR: [2:10%]	Selects transmit condition of RTP/PIP or RTN/PIN. (Available if No.103 ERROR DETECT is set to "RATE") (See Note 2)	"1" = 5% "2" = 10% "3" = 15% "4" = 20%
102	CONTI. ERROR: [4:Off]	Selects continuous total error criteria of 3/6/12 lines or Off as Standard mode. If continuous total error exceeds this setting, unit will transmit RTN/PIN.(Available if No.103 ERROR DETECT is set to "RATE")	"1" = 3 lines/STD "2" = 6 lines/STD "3" = 12 lines/STD "4" = Off (unlimited)
103	ERROR DETECT:[2:Rate]	Selects error detect condition Lines/Rate.	"1" = Lines "2" = Rate
104	RTN RECEIVE : [1:Discon]	Selects reaction when "RTN" is received.	"1" = Disconnect "2" = Continue
105 106	Not used		

Function Parameter Table

No.	Parameter [Default value]	Function	Selections
107	RCV 2400BPS F/B:[2:On]	Selects if unit fall back to 2400bps during reception when printer has been delayed.	"1" = Off (does not fall back) "2" = On (falls back)
108	RCV 40MSEC. F/B : [1:Off]	Selects if unit falls back to 40ms. min. recording scan time during reception when printer has been delayed.	"1" = Off (does not fall back) "2" = On (falls back)
109	300DPI REC = QULTY: [1:Off]	Selects if unit selects quality print mode automatically when using memory reception and received 300dpi (main scan) mode.	"1" = Off (does not select) "2" = On (selects)
110	SIGNAL TEST	Used for binary signal test. Same function as Test Mode No.4.	
111	TONAL TEST	Used for tonal signal test. Same function as Test Mode No.5.	
112	DTMF SIGNAL TEST	Used for DTMF signal test. Same function as Test Mode No.7.	
113	G.P.M. SELF TEST	Print out test pattern for checking thermal ink jet head. Same function as Test Mode No.0.	
114	Not used		
115	LED TEST	Used for LED and CCD test. Same function as Test Mode No.10.	
116	MONITOR: [1:Off]	Selects Monitor ON/OFF for monitoring fax signals.	"1" = Off "2" = On
117	DC LOOP: [1:Off]	Selects a false Off Hook state for back to back communication test..	"1" = Off (normal) "2" = On (Off Hook)
118 ~ 120	Not used		
121	SYSTM FAULT RPT: [1:Off]	Selects to print a system fault report or not. (Format is Comm. Journal)	"1" = Off (does notprint) "2" = On (prints)
122	DISP. INFO CODE: [2:On]	Selects to display an info. code or not.	"1" = Off (not displayed) "2" = On (displayed)
123	PROTOCOL DISPLAY: [1:Off]	Selects to display modem Speed during communication or not.	"1" = Off (not displayed) "2" = On (displayed)
124	BC/BE MODE: [2:MR]	Selects coding mode while communication. Internal coding mode is fixed as TX = MMR & RX = MR.	"1" = MH (MH only) "2" = MR (MR or MH)
125	MMR : [2:On]	Selects MMR mode. MMR is available even if No.124 is set to MH.	"1" = Off (Invalid) "2" = On (Valid)
126	USA. HANDSET: [1:None]	Selects if the machine has a USA type handset or not.	"1" = None "2" = Exist
127	MEM.BORDER CHECK: [1:Off]	Selects if remaining memory border check ratio uses preset (No.128) or 32k byte. If remaining memory is less than this level, machine will not perform memory reception.	"1" = Off (32k byte) "2" = On (preset)

Function Parameter Table

No.	Parameter [Default value]	Function	Selections
128	MEM.RCV BORDER: [20]%	Selects preset remaining memory border check ratio.	"00" = 00% : "99" = 99%
129	REAL TIME RCV: [1:Off]	Selects whether or not the machine utilizes the memory as a print buffer. (Recommended to set to "Off" always)	"1" = Off (Page by page mode) "2" = On (Real time mode)
130	HEADER POSITION: [2:In]	Selects print location of header & total page print. Same function as Fax Parameter No.07.	"1" = Off (none) "2" = Inside "3" = Outside
131	HEADER FORMAT : [2:From To]	Selects header printing format. Same function as Fax Parameter No.08.	"1" = Logo ID "2" = From To
132	Not used		
133	JNL COLUMN : [1:Station]	Selects contents of ID column on journal print.	"1" = Preset Station name "2" = Received ID
134	RCVD TSI PRINT: [1:Off]	Selects if TSI print (received time print) functions.Same function as fax parameter No.09.	"1" = Off (not printed) "2" = On (printed)
135	Not used		
136	PRINT QUALITY: [1:Quality]	Selects printer print quality . Same function as Fax Parameter No.14.	"1" = Quality "2" = Fast
137	PRINT DIRECTION: [2:Bi]	Selects printer print direction, bi or uni directional.(Recommended to set to "Bi" always)	"1" = Uni directional "2" = Bi directional
138	PRINT REDUCTION: [2:Auto]	Selects print reduction mode, Automatic or Fixed . Same function as Fax Parameter No.15.	"1" = Fixed "2" = Automatic
139	REDUCTION RATIO: [94] %	Selects Fixed reduction ratio. Same function as Fax Parameter No.16.	"70" = 70% : "100" = 100%
140	CCITT ECM : [2:On]	Selects ECM mode.	"1" = Off (Invalid) "2" = On (Valid)
141 142	Not used		
143	SUBSTITUTE RX : [2:On]	Selects Substitute RX function. Same function as Fax Parameter No.17.	"1" = Off (Invalid) "2" = On (valid)
144	Not used		
145	COMM. START-UP : [1:1'st]	Selects communication start-up condition(XMT and Polling].	"1" = 1'st response "2" = 2'nd response
146 ~ 149	Not used		
150	PBX D-TONE DET:[1:On]	Selects PBX dial tone function. This parameter relates with no. 076.	"1" = Off (not detected) "2" = On (detects)
151	CI FREQ. DET:[1:Off]	Selects if unit checks CI signal frequency.	"1" = Off (not checked) "2" = On (checks)
152	BUZZER : [2:Loud	Selects Buzzer volume. Same function as Fax Parameter No.19.	"1" = Soft "2" = Loud

Function Parameter Table

No.	Parameter [Default value]	Function	Selections
153	BUSY TONE CHECK: [1:Off]	Selects Busy Tone detection function.	"1" = Off "2" = On
154	DIAL TONE CHECK:[1:Off]	Selects dial tone detection function. (For use in Germany, Austria and Switzerland only)	"1" = Off "2" = On
155	DC LOOP CHECK:[1:Off]	Selects if unit checks DC Loop during communication.	"1" = Off (not checked) "2" = On (checks)
156	GPM IGNORE MODE:[1:Off]	Selects GPM (Printer) disconnect mode. Initial test time will be shorten.(factory use only)	"1" = Off (Normal mode) "2" = On (Ignore mode)
157	QUALITY SPEED: [2:High]	Selects print speed. (effects quality mode only)	"1" = Normal (3.6 KHz) "2" = High (3.6 or 5 KHz)
158	REC. PAPER SIZE: [1:A4]	Selects recording paper size. Same function as Fax Parameter No.13.	"1" = A4 "2" = Letter "3" = Legal
159	ALARM STATUS:[1:Timer]	Selects No paper & No ink alarm status. If "Constant" is selected, alarm will not stop until pressing STOP or clear the error.	"1" = Timer (6sec.) "2" = Constant
160 ⟆ 167	Not used		
168	RR/NR TIMER:[1:1min]	Selects ECM T5 timer. (CCITT = 1min. ± 15%)	"1" = 1min. "2" = 4min.
169	Not used		
170	RING DET MODE:[1:Normal]	Selects seriousness of ringer, dial tone and busy tone detection. Use if the line signals are out of regulation, to set "Rough" so unit may detect the signals.	"1" = Normal "2" = Rough
171	INT'L DT DET:[00] (For Belgium only.)	Enter the International Access Code. (Up to 4 digits using 0 to 9, # and *.)	
172	Not used		
173	SILENT DETECTION:[2:On]	Selects silent detection function (TAM I/F). Same function as Fax Parameter No.12.	"1" = Off "2" = On
174	SILENT DET.DELAY:[20]	Selects silent detection delay time (TAM I/F).	"00" = 0 sec. ⟆ "99" = 99sec.
175	SILENT DET.TIMEOUT:[60]	Selects silent detection timeout time (TAM I/F).	"00" = 0 sec. ⟆ "99" = 99sec.
176	SILENT INTEGRATION TIME:[50]00msec.	Selects silent detection integration time (TAM I/F).	"00" = 0000m sec. ⟆ "99" = 9900msec.(9.9sec.)
177	RING DET COUNT(TAM):[8]	Selects ring detect count 1 to 9 times in one step intervals on TAM I/F mode.	"1" = 1time ⟆ "9" = 9times

Function Parameter Table

No.	Parameter [Default value]	Function	Selections
178 ~ 199	Not used		

Note 1: No.100 LINE ERROR, Transmit condition of RTP/PIP or RTN/PIN.

Setting / Signal	1:128	2:256	3:512	4:1024	5:2048	6:Off
MCF/PIP	0~31	0~63	0~127	0~255	0~511	Always
RTP/PIP	32~63	64~127	128~255	256~511	512~1023	--
RTN/PIN	64~127	128~255	256~511	512~1023	1024~2047	--

Note 2: No.101 TOTAL ERROR, Transmit condition of RTP/PIP or RTN/PIN.

Setting / Signal	1:5 %	2:10 %	3:15%	4:20 %
MCF/PIP	0~2	0~4	0~7	0~9
RTP/PIP	3~4	5~9	8~14	10~19
RTN/PIN	5~	10~	15~	20~

Note 3: The default settings and the contents of Function Parameter depends on the country's regulation or specification.

5.4 Test Mode No.3 (Function Parameter List Printout)

A list of all function parameters can be printed out using the following procedure.

Function Parameter List Printout

Step	Operation or unit condition	LCD display
1	Standby	12-12-1991 12:00
2	Press "#" (SET).	-
3	Press"TEL/DIAL" four times and "*".	-
4	Press "3" and "START".	12-12-1991 12:00
5	After printing is completed, the unit returns to the display in step 3.	-
6	Press "STOP" to return to standby.	12-12-1991 12:00

```
********** -FUNCTION PARAMETER- ********** DATE 01-01-1992 ****** TIME 03:58   ** P.

000 ----------
001 ----------
002 ----------
003 ----------
004 NUMERIC ID SET:[On=2] On=2
005 LANGUAGE:[English=1] English=1
006 ----------
007 ----------
008 MEM-STORED STAMP:[Off=1] Off=1
009 RCV MODE:[FAX=2] FAX=2

010 TX LEVEL:[-9dBm] -9dBm
011 RX LEVEL:[-43dBm=1] -43dBm=1
012 DTMF LEVEL:[-6dBm] -6dBm
013 G3 RX EQL:[1.8km=2] 1.8km=2
014 ----------
015 G3 TX EQL:[0km=1] 0km=1
016 ----------
017 TX START:[9600bps=4] 9600bps=4
018 RX START:[9600bps=4] 9600bps=4
019 ----------

020 ----------
021 EP TONE:[Off=1] Off=1
022 SIG. INTERVAL:[500ms=3] 500ms=3
023 TCF CHECK:[Normal=1] Normal=1
024 CED FREQ.:[2100Hz=2] 2100Hz=2
025 ----------
026 NON-STANDARD:[On=2] On=2
027 SHORT PROTOCOL:[On=2] On=2
028 ----------
029 REMOTE DIAG.:[On=2] On=2

030 CED & 300bps:[75ms=1] 75ms=1
031 RTC-EOL x 12:[Off=1] Off=1
032 CSI TRANSMIT:[On=2] On=2
033 TSI TRANSMIT:[On=2] On=2
034 CIG TRANSMIT:[On=2] On=2
035 ----------
036 ----------
037 ----------
038 ----------
039 ON-HOOK DIAL:[On=2] On=2

040 LINE AS PRINT'G:[Ring=1] Ring=1
041 AT COVER OPEN:[Error=2] Error=2
042 ----------
043 REDIAL INTERVAL:[3] 3 min
044 REDIAL COUNT:[5] 5
045 RING DET. COUNT:[1] 1
046 ON-HOOK TIME:[5] 5 sec
047 ----------
048 EXT.TEL DIAL:[Invalid=1] Invalid=1
049 ----------

050 JNL PRINT:[Auto print=2] Auto print=2
051 ----------
052 COMM. JNL:[Inc.=3] Inc.=3
053 ----------
054 POW. FAIL REPORT:[Off=1] Off=1
055 ----------
056 ----------
057 ----------
058 ----------
059 COMM. STOP JNL:[Off=1] Off=1

060 VERSION:  UF-311  (NAM)V2.13
061 TX/RX/CPY COUNTER:000155/000428/000131
062 ----------
063 INK TEST:[On=2] On=2
064 DATA CROP:[On=2] On=2
065 HALF TONE LEVEL:[Normal=1] Normal=1
066 FUNC PARA. PRINT
067 ----------
068 ----------
069 RESPONSE WAIT:[65] 65 sec

070 TAM I/F:[None=1] None=1
071 ----------
072 ----------
073 ----------
074 DIAL TYPE:[DTMF=2] DTMF=2
075 PULSE RATE:[10pps=1] 10pps=1
076 ----------
077 PAUSE TIME:[3] 3 sec
078 ----------
079 ----------

080 DOC TOP FEED:[31] 31 mm
081 DOC END FEED:[25] 25 mm
082 TX-JAM LENGTH:[2m=2] 2m=2
083 ----------
084 ----------
085 ----------
086 ----------
087 LIGHT LEVEL:[4] 4
088 NORMAL LEVEL:[2] 2
089 ----------

090 HOME RESOL.:[Standard=1] Standard=1
091 HOME ORIGINAL:[Normal=1] Normal=1
092 HOME STAMP:[Off=1] Off=1
093 ----------
094 ----------
095 ----------
096 ----------
097 ----------
098 ----------
099 VALID PAGE XMT:[On=2] On=2

                -Panafax UF-311          -

**********  -      B1 268 61 0010- **********
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100 LINE ERROR:[12B=1] 12B=1
101 TOTAL ERROR:[10%=2] 10%=2
102 CONTI. ERROR:[Off=4] Off=4
103 ERROR DETECT:[Rate=2] Rate=2
104 RTN RECEIVE:[Discon=1] Discon=1
105 ————————
106 ————————
107 RCV 2400BPS F/B:[On=2] On=2
108 RCV 40MSEC. F/B:[Off=1] Off=1
109 300DPI REC.QUAL:[Off=1] Off=1

110 SIGNAL TEST
111 TONAL TEST
112 DTMF SIGNAL TEST
113 G.P.M. SELF TEST
114 ————————
115 LED TEST
116 MONITOR:[Off=1] Off=1
117 DC LOOP:[Off=1] Off=1
118 ————————
119 ————————

120 ————————
121 SYSTM FAULT RPT:[Off=1] Off=1
122 DISPL.INFO CODE:[On=2] On=2
123 PROTOCOL DISPLAY:[Off=1] Off=1
124 BC/BE MODE:[MR=2] MR=2
125 MMR:[On=2] On=2
126 USA HANDSET:[None=1] None=1
127 MEM.BORDER CHECK:[Off=1] Off=1
128 MEM.RCV BORDER:[20] 20 %
129 REAL TIME RCV:[Off=1] Off=1

130 HEADER POSITION:[In=2] In=2
131 HEADER FORM:[From_to=2] From_to=2
132 ————————
133 JNL COLUMN:[Station=1] Station=1
134 RCV'D TSI PRINT:[Off=1] Off=1
135 ————————
136 PRINT QUALITY:[Fast=1] Fast=1
137 PRINT DIRECTION:[Bi=2] Bi=2
138 PRINT REDUCTION:[Auto=2] Auto=2
139 REDUCTION RATIO:[94] 94 %

140 CCITT ECM:[On=2] On=2
141 ————————
142 ————————
143 SUBSTITUTE RCV:[On=2] On=2
144 ————————
145 COMM. START-UP:[1'st=1] 1'st=1
146 ————————
147 ————————
148 ————————
149 ————————

150 ————————
151 ————————
152 BUZZER:[Loud=2] Loud=2
153 BUSY TONE CHECK:[On=2] On=2
154 ————————
155 ————————
156 GPM IGNORE MODE:[Off=1] Off=1
157 QUALITY SPEED:[High=2] High=2
158 REC. PAPER SIZE:[LTR=2] LTR=2
159 ALARM STATUS:[Timer=1] Timer=1

160 ————————
161 ————————
162 ————————
163 ————————
164 ————————
165 ————————
166 ————————
167 ————————
168 RR/RNR TIMER:[4 min.=2] 4 min.=2
169 ————————

170 RING DET MODE:[Normal=1] Normal=1
171 ————————
172 ————————
173 SILENT DETECTION:[On=2] On=2
174 SILENT DET. DELAY:[20] 20 sec
175 SILENT DET. TIMEOUT: [60] 60 sec
176 SILENT INTEGRATION TIME:[50] 5000msec
177 RING DET. COUNT(TAM):[8] 8
178 ————————
179 ————————

180 ————————
181 ————————
182 ————————
183 ————————
184 ————————
185 ————————
186 ————————
187 ————————
188 ————————
189 ————————

190 ————————
191 ————————
192 ————————
193 ————————
194 ————————
195 ————————
196 ————————
197 ————————
198 ————————
199 ————————

Note:The power must be reset for the new parameter settings to take effect.

-Panafax UF-311 -

5.5 Test Mode No.4 (Binary Signal Generation)

Signals can be outputted to the line using following procedure.

Binary Signal Generation

Step	Operation or unit condition	LCD display
1	Standby	12-12-1991 12:00
2	Press "#" (SET).	-
3	Press"TEL/DIAL" four times and press "*" .	-
4	Press "4" and "START".	9600
5	Select the binary signal by pressing < (ORIGINAL) or > (RESOLUTION) then press "START" to generate the signal.	9600
6	Press "STOP" to end the signal generation. To select other signal, go back to step 5.	9600
7	Press "STOP" twice to return to standby.	12-12-1991 12:00

Signals
V21 300BPS
V29 9600BPS
V29 7200BPS
V27ter 4800BPS
V27ter 2400BPS

Binary Signal Table

5.6 Test Mode No.5 (Tonal Signal Generation)

A signal can be outputted to the line using following procedure.

Tonal Signal Generation

Step	Operation or unit condition	LCD display
1	Standby	12-12-1991 12:00
2	Press "#" (SET).	-
3	Press"TEL/DIAL" four times and press "*" .	-
4	Press "5" and "START".	462
5	Select the tonal signal by pressing < (ORIGINAL) or > (RESOLUTION) then press "START" to generate the signal.	462
6	Press "STOP" to end the signal generation. To select other signal, go back to step 5.	462
7	Press "STOP" three times to return to standby.	12-12-1991 12:00

Signals
462Hz
1080Hz
1100Hz
1650Hz
1850Hz
2100Hz

Tonal Signal Table

5.7 Test Mode No.6 (RAM Initialization)

Initialize the RAM and store the default values of function parameters using following procedure. Note, this operation should be performed when the unit is installed.

RAM Initialization

Step	Operation or unit condition	LCD display
1	Standby	12-12-1991 12:00
2	Press "#" (SET).	-
3	Press"TEL/DIAL" four times,and press "*" .	-
4	Press "6"and "START".	-
5	Select the number to initial RAM data from following table.	99
6	Press "START".	
7	Unit will return to standby automatically after a long beep.	12-12-1991 12:00

RAM Initialization Table

No.	Initialize Mode	Description
99	SHIPMENT SET (A)	Delete all setting information (except for parameter number 080 and 081) then set defult values.
98	SHIPMENT SET (B)	Delete all setting information (except for parameter number **061**, 080 and 081) then set defult values.
1#	MANUFACTURE SET	Manufacture testing values will be set.
19	ALL JOB CLEAR	All Jobs will be cleared.
13	ABBR. DIAL CLEAR	One-Touch/ ABBR.No. will be cleared.
12	JOURNAL CLEAR	Journal contents will be cleared.
*	PARAMETER INITIAL	Parameter settings will be restored to default values.
10	LOGO/ID/PSWD CLEAR	Logo / ID / Polling Password will be cleared.

5.8 Test Mode No.7 (DTMF Signal Generation)

DTMF signal can be generated using following procedure.

DTMF Signal Generation

Step	Operation or unit condition	LCD display
1	Standby	12-12-1991 12:00
2	Press "#" (SET).	-
3	Press"TEL/DIAL" four times and "*".	-
4	Press "7"and "START".	697
5a	Select the DTMF Single Signal by pressing < (ORIGINAL) or > (RESOLUTION) then press "START" to generate the signal.	697 ├
5b	Enter signal number (0-#) to select DTMF dual signal then press "START" to generate the signal.	[0] 941 1336 ├
6	Press "STOP" to end the signal generation. To select other signal, go back to step5a/5b.	697
7	Press "STOP" twice to return to standby.	12-12-1991 12:00

DTMF Single Signal Table

DTMF Single Signals
697Hz
770 Hz
852 Hz
941 Hz
1209 Hz
1336 Hz
1477 Hz
1633 Hz

DTMF Signal (Dual) Table

Number	DTMF Signals (Dual)
0	941Hz and 1336Hz
1	697Hz and 1209Hz
2	697Hz and 1336Hz
3	697Hz and 1477Hz
4	770Hz and 1209Hz
5	770Hz and 1336Hz
6	770Hz and 1477Hz
7	852Hz and 1209Hz
8	852Hz and 1336Hz
9	852Hz and 1477Hz
*	941Hz and 1209Hz
#	941Hz and 1477Hz

5.9 Test Mode No. 9 (RAM TEST)

The RAM can be tested by comparing data written and read in the document memory.

RAM TEST

Step	Operation or unit condition	LCD display
1	Standby	12-12-1991 12:00
2	Press "#" (SET).	-
3	Press"TEL/DIAL" four times and "*".	-
4	Press"9" and "START".	-
5a	Unit will sound when the writing and reading of the RAM data are satisfied.	-
5b	If some data error exists, the data shows in the display with address.	E-00-73FC 49-00
6	Press "STOP" to return to standby.	12-12-1991 12:00

Note : This test should be done after deleting all files.

5.10 Test Mode No. 10 (LED / LCD / CCD Test)

The LEDs, LCD and CCD can be checked using following procedure.

LED/LCD/CCD TEST

Step	Operation or unit condition	LCD display
1	Standby	12-12-1991 12:00
2	Press "#" (SET).	-
3	Press"TEL/DIAL" four times and "*".	-
4	Press "10" and "START". 1) LCD will be displayed as shown on right 2) All LEDs will be lit. 3) Scanner will be active. (Use for CCD test)	88888888888888 - - - - - -
5	Press "STOP" twice to return to standby.	12-12-1991 12:00

Chapter 6
System Description

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NOTE: The contents in this chapter covers both the UF-311 and UF-312.

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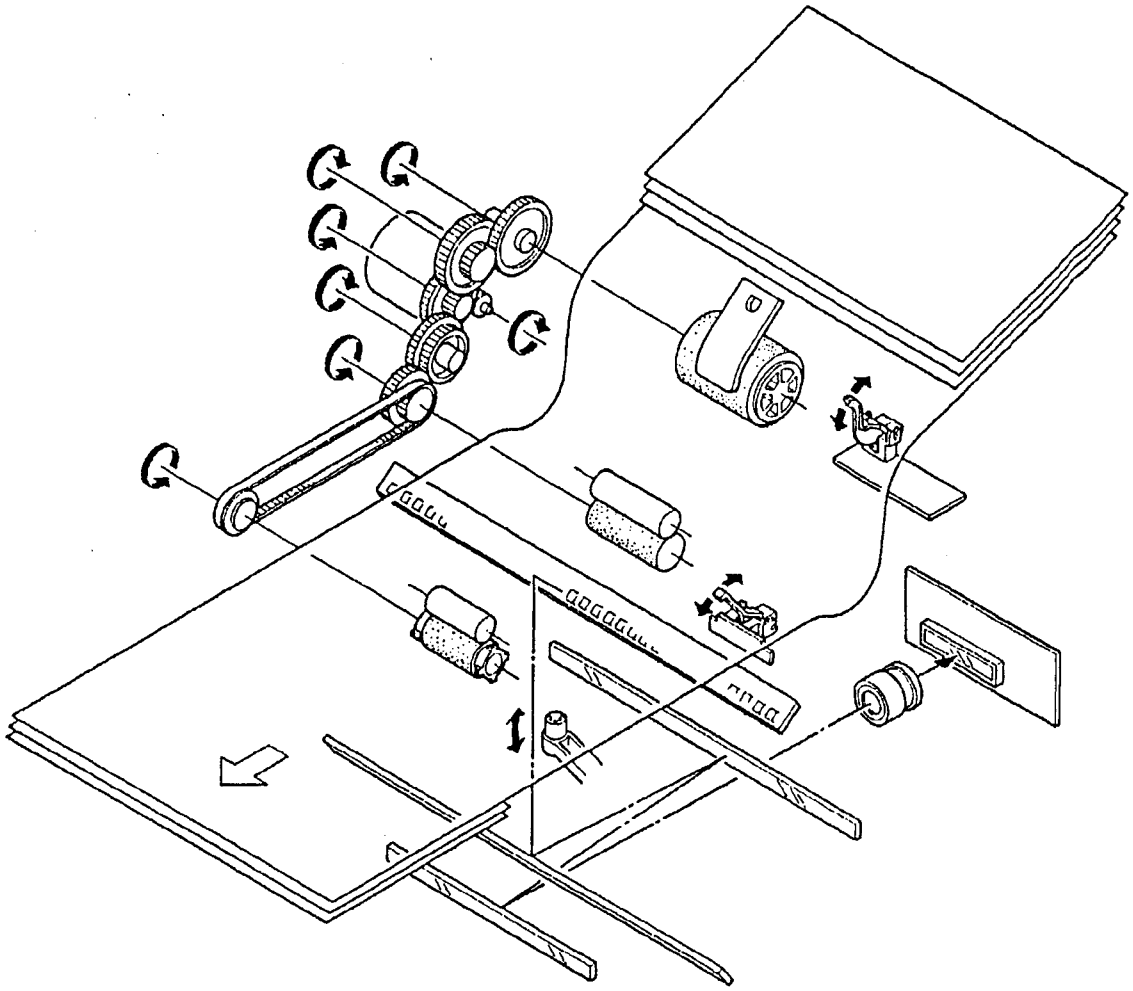
6.1 Mechanism

6.1.1 Block Diagram



Transmitter Mechanism

6.1.2 Mechanism Operation in Transmission

Document set

↓

(1) Document sensor (SNS PC Board) is on.

↓

START button is pressed.

(If built-in dialer is used for dialing, this step is not necessary.)

↓

(2) Document is fed to scanning point. : Normal rotation by Motor

(3) Scanning starts. : Normal rotation by Motor

(4) Trail edge of document passes sensor.

(5) Read Point Sensor (SNS PC Board) is off.

(6) Document is ejected. : Normal rotation by Motor

6.1.3 Mechanism Operation in Reception

Ringing signal is detected.

↓

(1) Recording paper is fed. : Normal rotation by Motor

(2) Recording is performed.

↓

Recording is completed.

↓

(3) Recording paper is ejected. : Normal rotation by Motor

6.1.4 Mechanism Operation in Copy Mode

Document set

↓

(1) Document sensor (SNS PC Board) is on.

Press ***COPY*** and ***START***(*) buttons .
(* Pressing ***START*** button is required for UF-312 only.)

(2) Document is fed to scanning point. : Normal rotation by Motor

(3) Recording Paper is fed to the recording position.

(4) Copy mode starts. : Normal rotation by Motor

(5) Trail edge of document passes sensor.

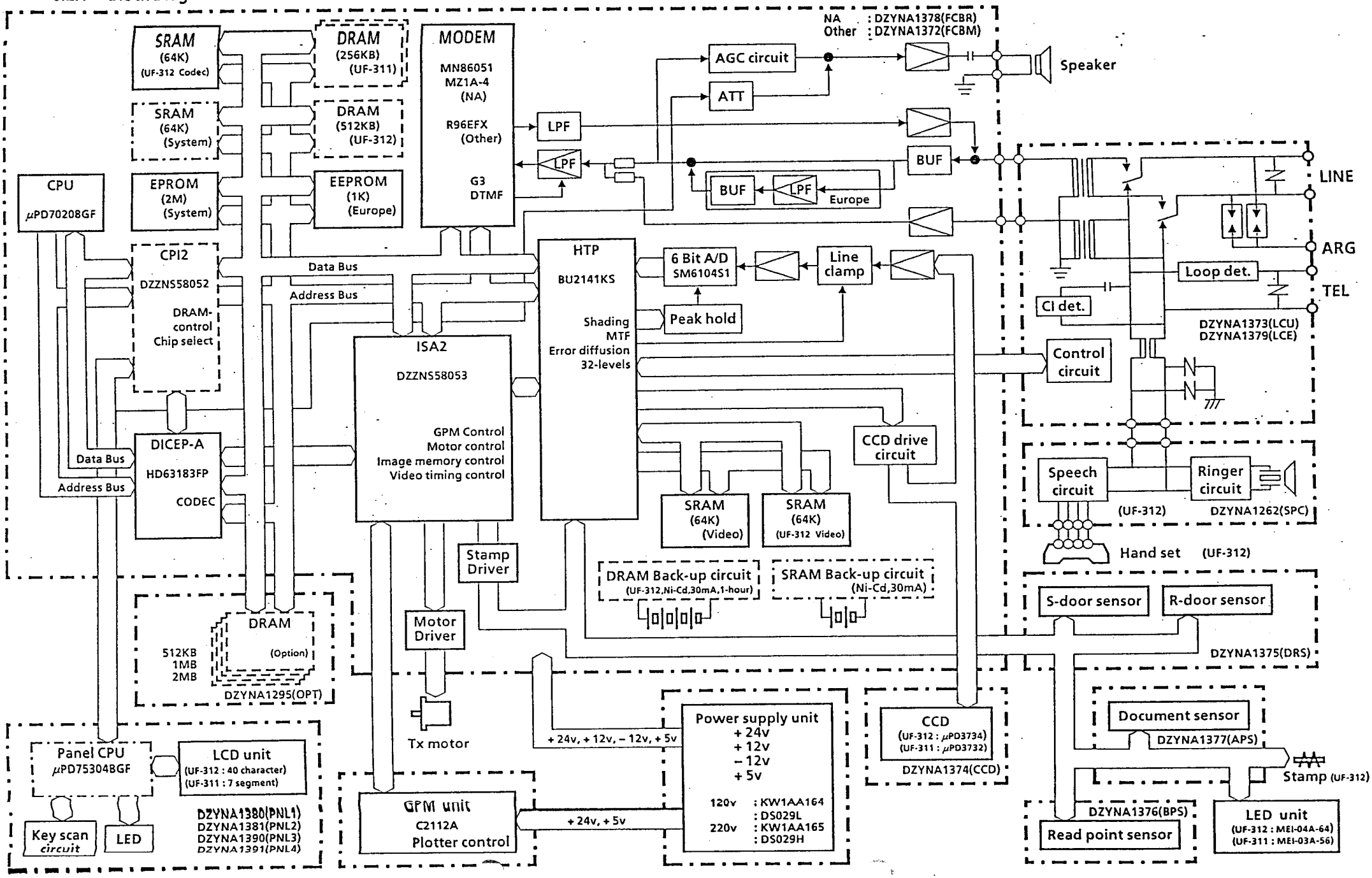
(6) Read Point Sensor (SNS PC Board) is off.

(7) Document is ejected. : Normal rotation by Motor

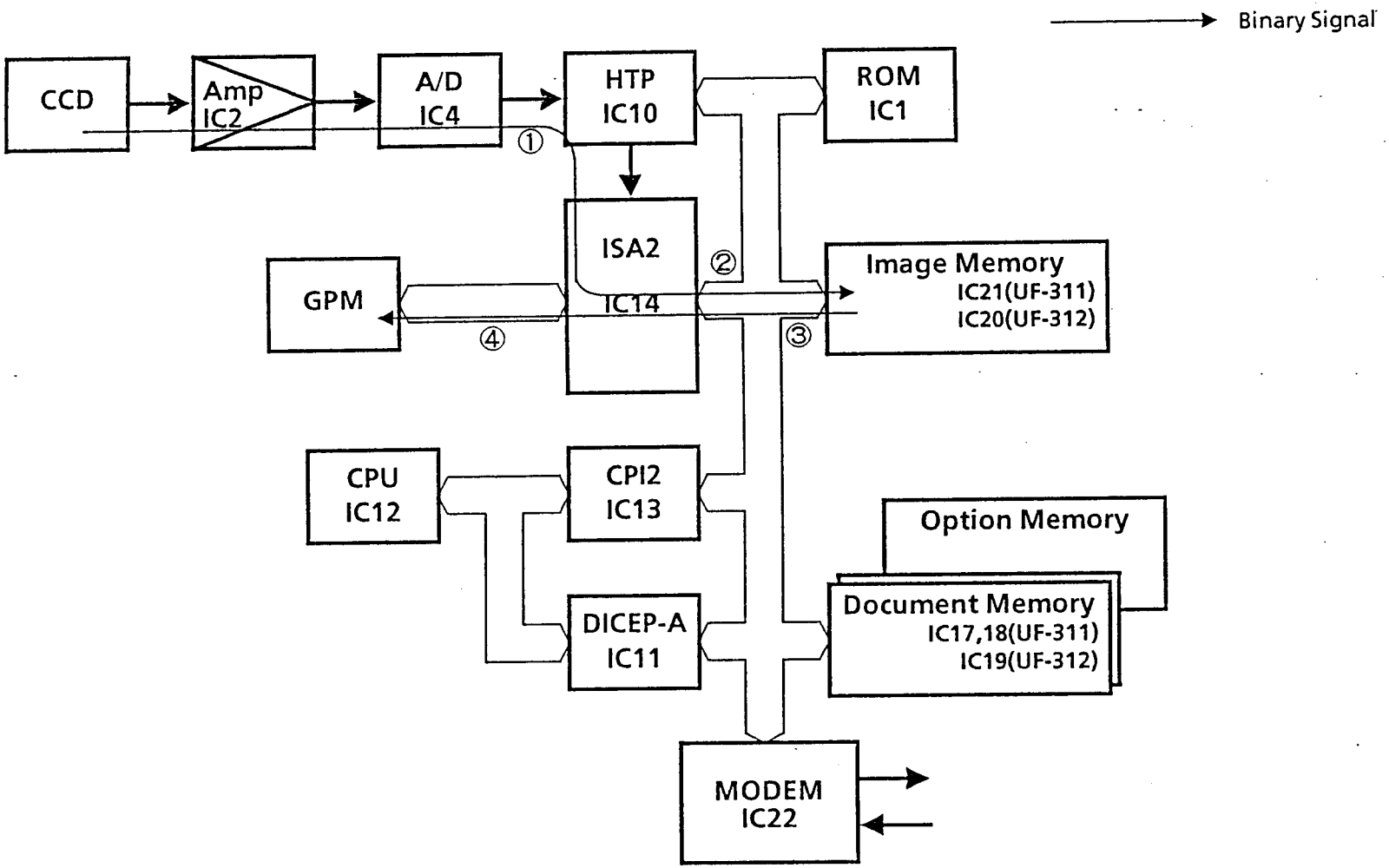
(8) Recording paper is ejected.

6.2 Electrical Circuit

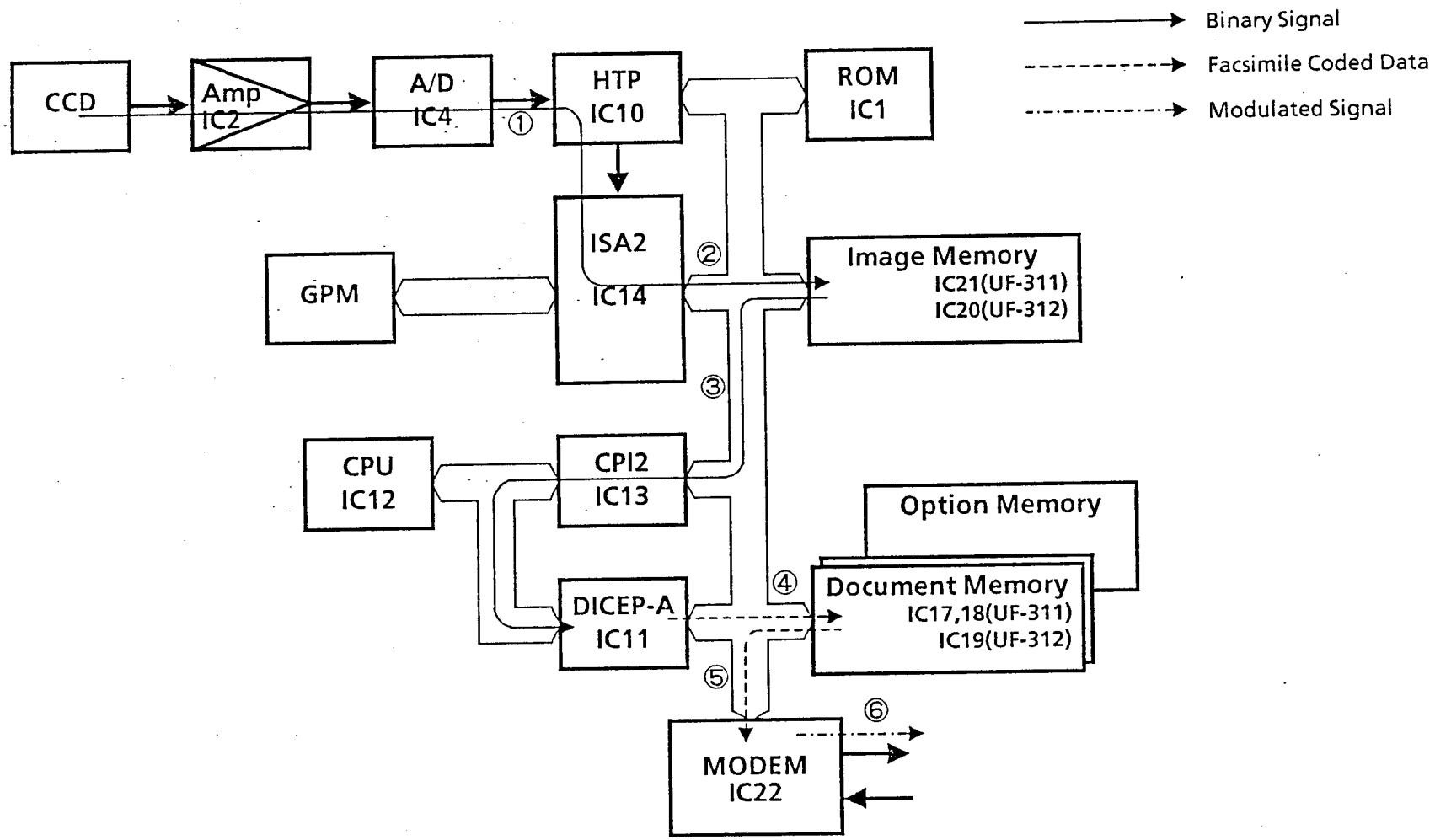
6.2.1 Block Diagram



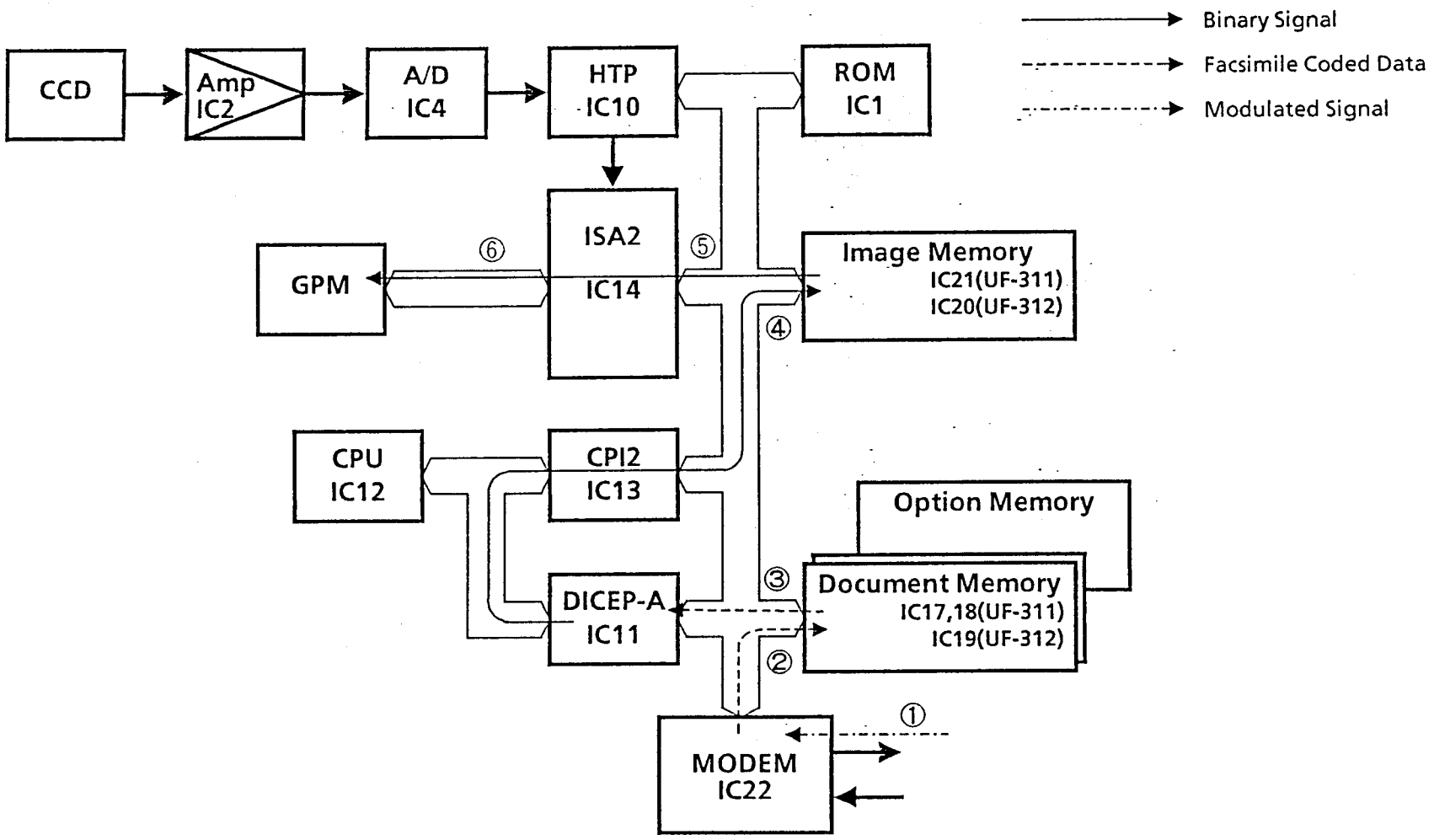
6.2.2 Signal Route in Copy Mode



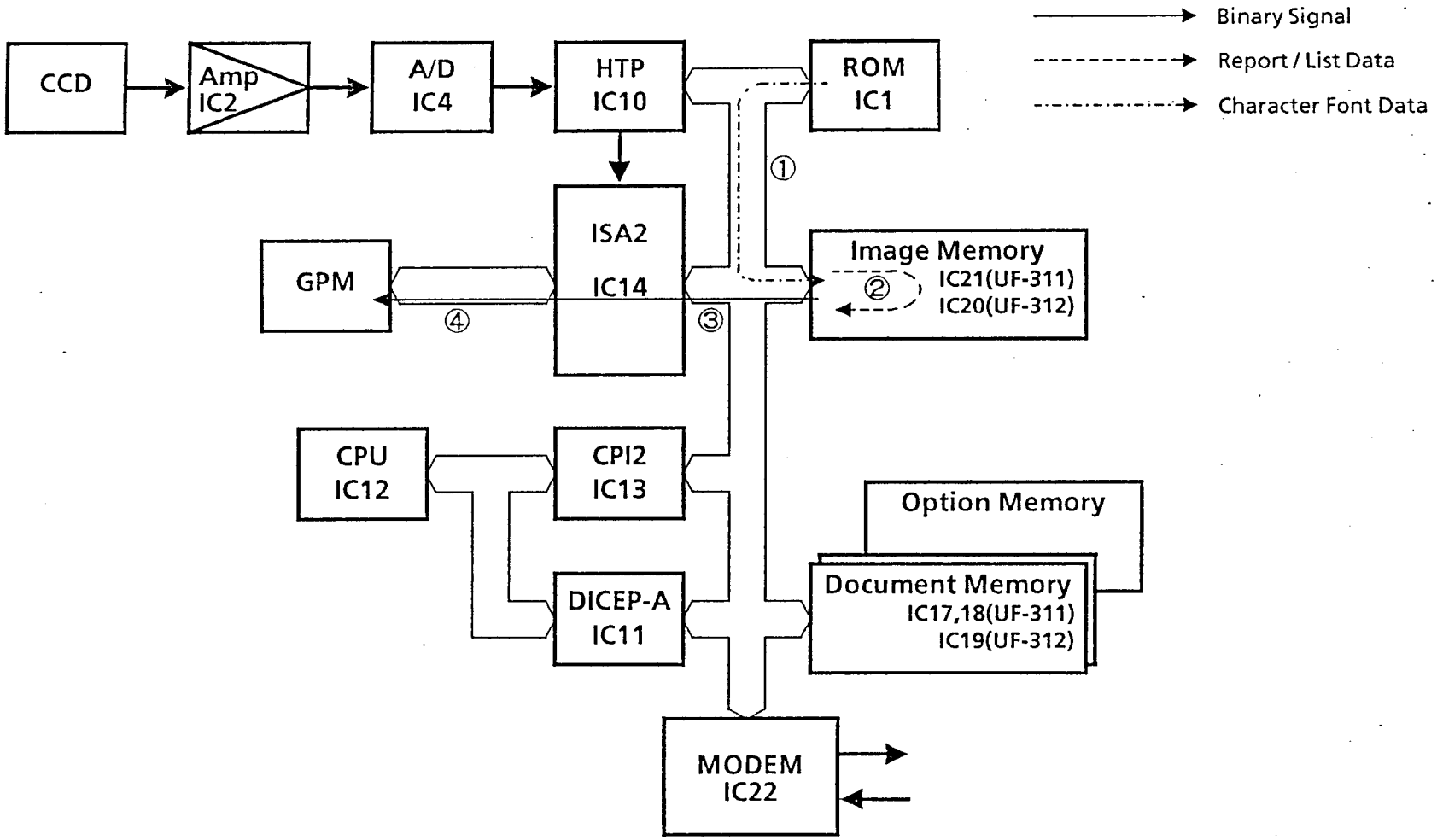
6.2.3 Signal Route in Transmission



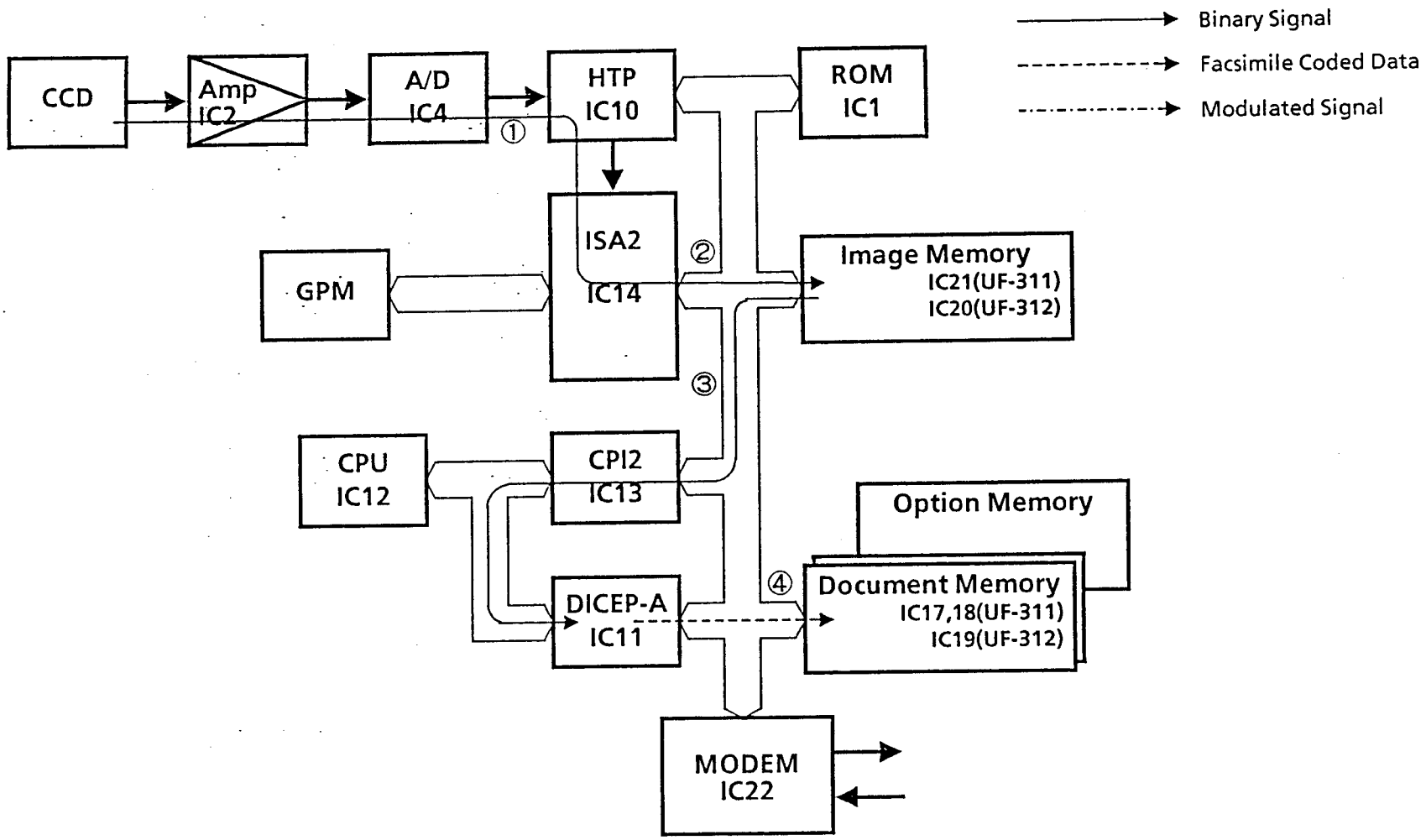
6.2.4 Signal Route in Reception



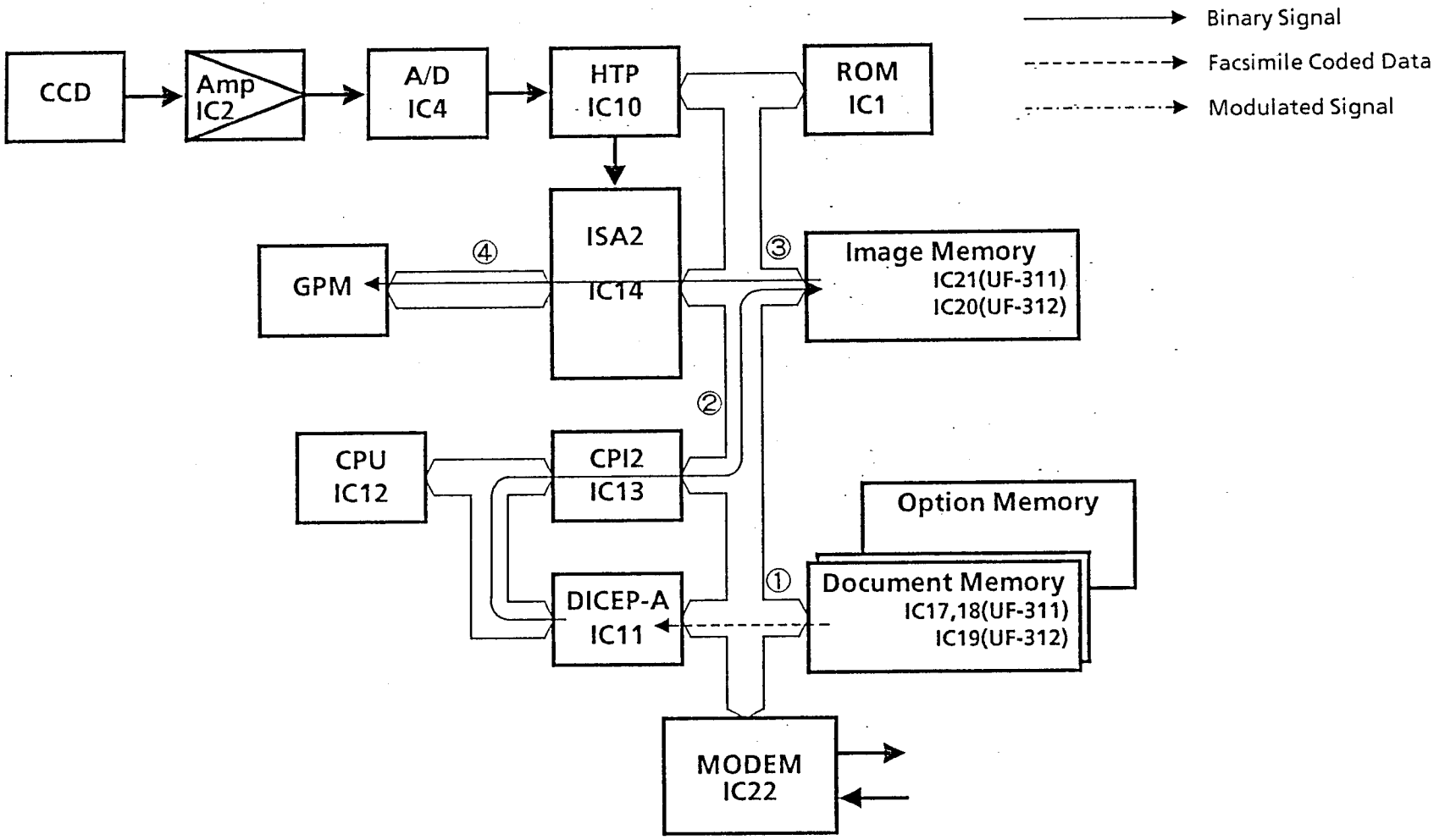
6.2.5 Signal Route in Printing of Reports or Lists



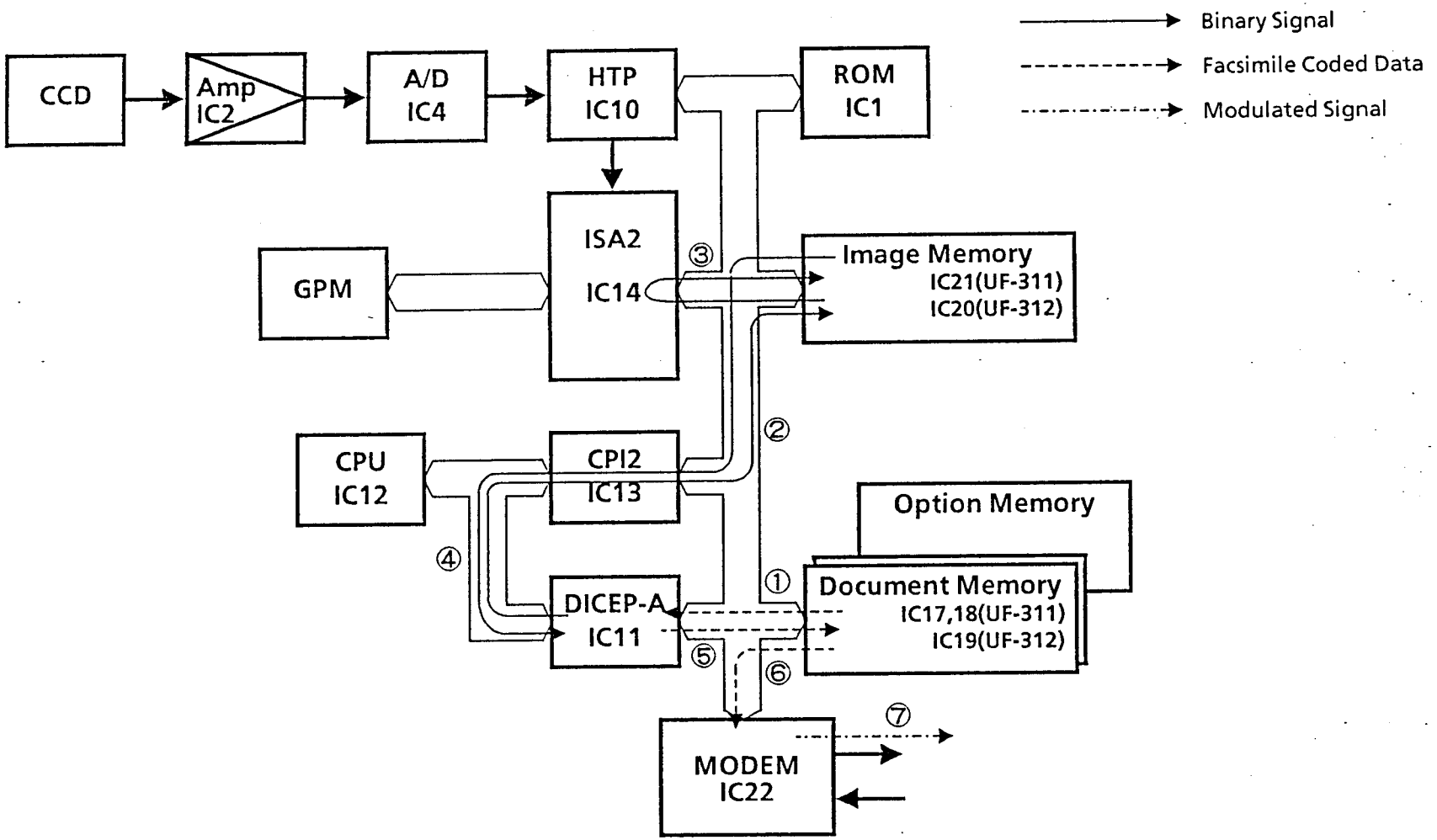
6.2.6 Signal Route in Memory Input



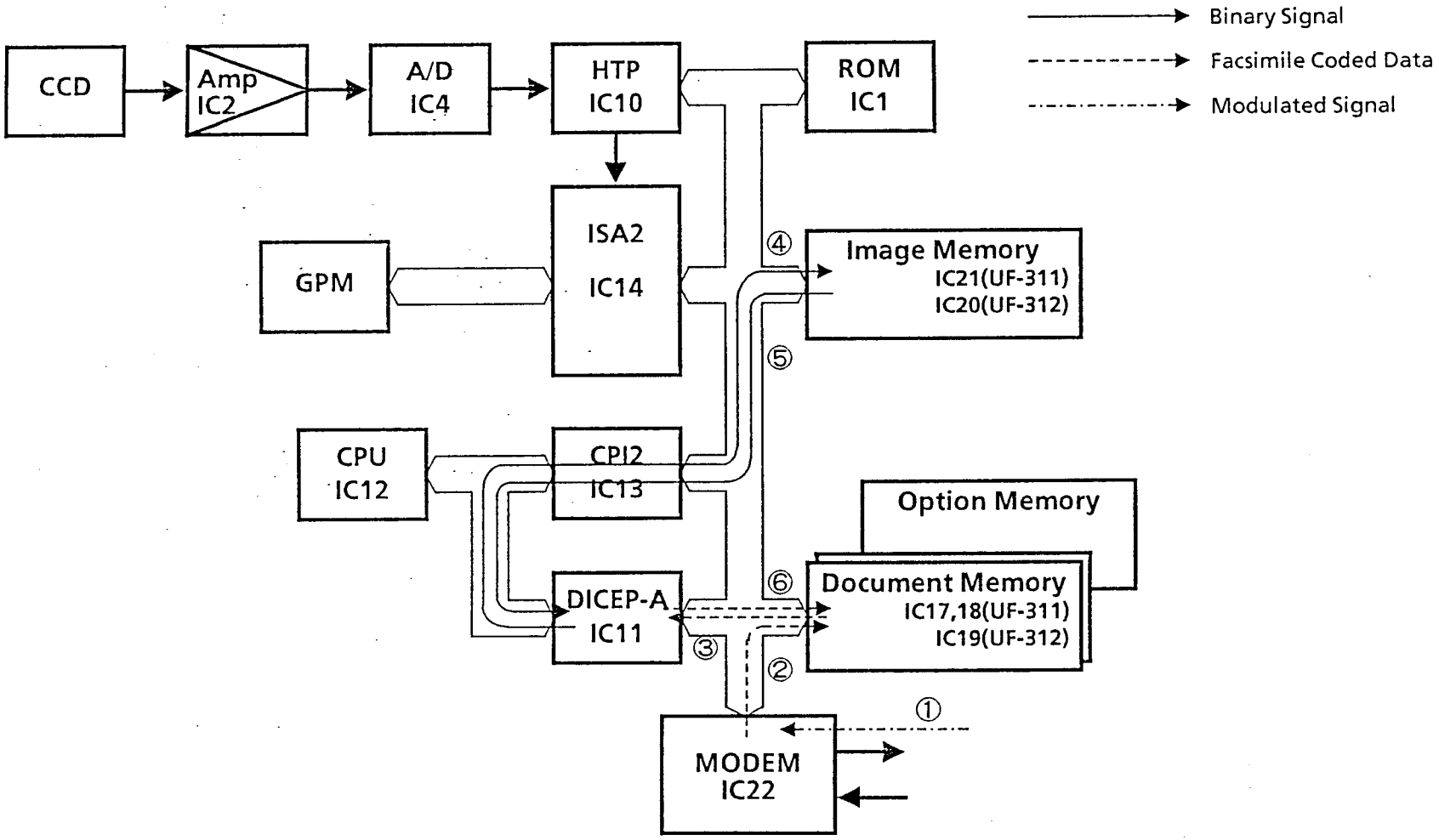
6.2.7 Signal Route in Printing from Memory



6.2.8 Signal Route in Memory Transmission



6.2.9 Signal Route in Memory Reception



6.3 System Control Block (FCBM PC Board)

The system control circuit is the main block and controls the entire system by means of the CPU (μPD70208 (V.40)) and its peripherals. FCBM PC board consists of the following circuits.

(1) CPU and its peripheral circuits

CPU (μPD70208 (V.40)) --- 8 bit data bus, 20 bit address bus.
Address decoder
Read/write timing generator

(2) System memory

S-RAM ..... Capacity: 8K byte/UF-311, 16K byte/UF-312

- Program work area
- Telephone number
- Journal data
- Parameter storage
- Image memory (Line memory)
- Battery back up

ROM ..... Capacity: 2M bit

- System software

(3) Encode/Decode Block (2 Blocks)

DICEP-A ..... Encode/Decode processor (MH, MR, MMR)

ISA2 ..... ASIC (Standard-cell)

- Video signal interface
- Reduction Control (70% to 100%)
- Image Scaling (300dpi ⟷ 8 dot)
- Parallel → Serial conversion
- Serial → Parallel conversion
- Slave DMA function
- Scanning Motor Control
- GPM Interface
- Stamp Control (for UF-312 only)

(4) Document memory

D-RAM Capacity: 256K byte/UF-311, 512K byte/UF-312
(Option 512K, 1M, 2M byte)

- Document memory
  (Capacity minus 96Kbyte)
- Work area (32Kbyte)
- ECM buffer (64Kbyte)
- Battery backup (for UF-312 only)

(5) HTP (Halftone Processor)

- Video signal control
- Sensor status input
- LCU status input
- Panel status input
- Relay control

(6) CPi (CPU Peripheral interface)

- CS (Chip Select Generator)
- Battery Backup control for D-RAM
- Panel unit interface

(7) MODEM Block

- System bus interface, SCF
- Digital signal processor

(8) Battery backup circuit for S-RAM

(9) Battery backup circuit for D-RAM

(10) Line monitor circuit

(11) Reset circuit

6.4 Encode/Decode Block

① When transmitting, the serial picture signal from the HTP is converted to 8 bit parallel data by the ISA2 and transferred to the image memory by means of image DMA. The data is converted from 300dpi data to 8-dot data by the ISA when necessary.
DISEP-A performs this transfer by means of direct memory access (DMA).

② The DISEP-A reads the data from image memory and encodes the data using MH, MR or MMR coding.

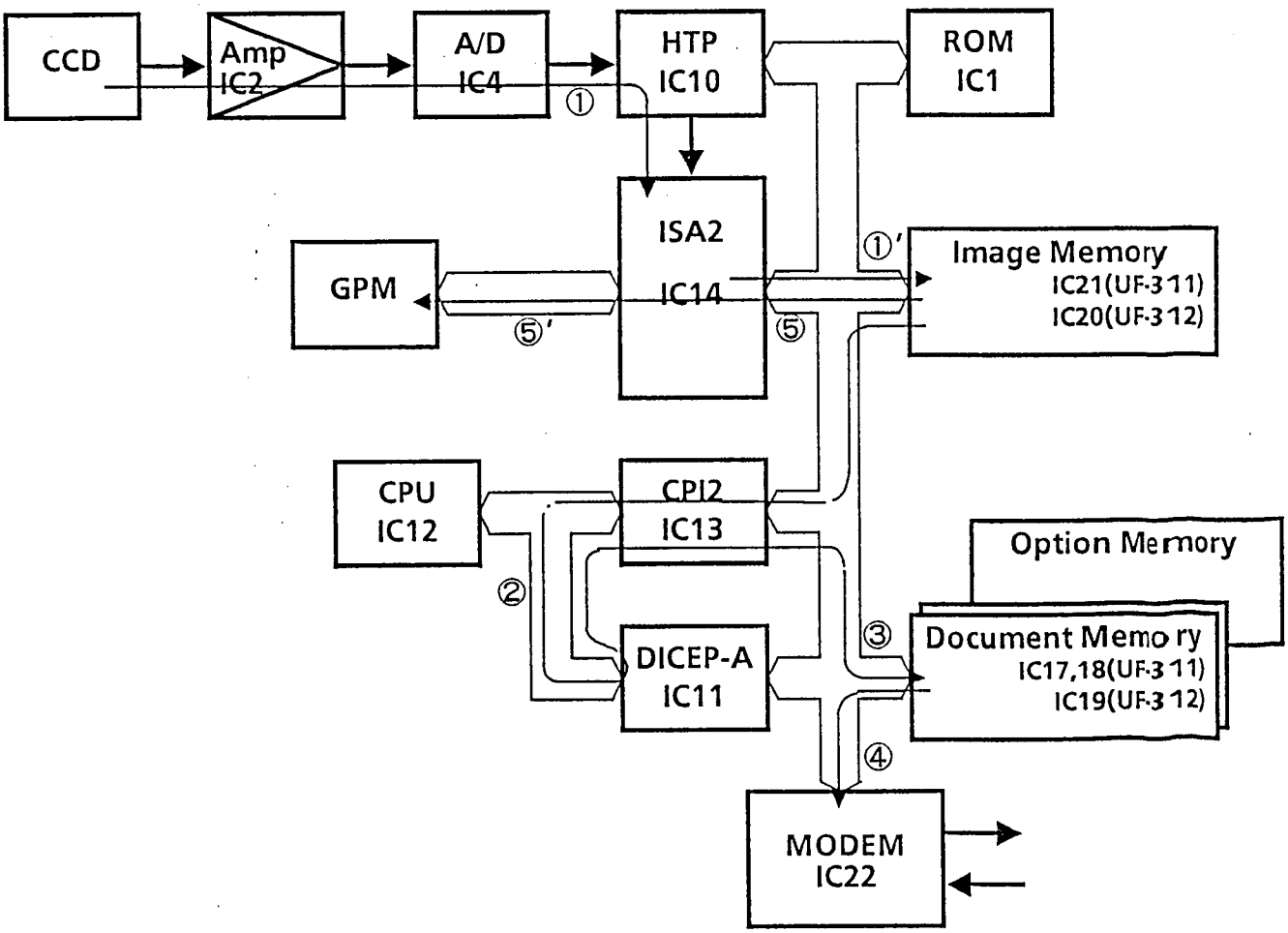
③ The CPU transfers this coded data to the buffer RAM by means of system DMA.

④ The coded data in the buffer RAM is transferred to the Modem by means of Line Data. The data is then transferred to the telephone line as an analog signal.

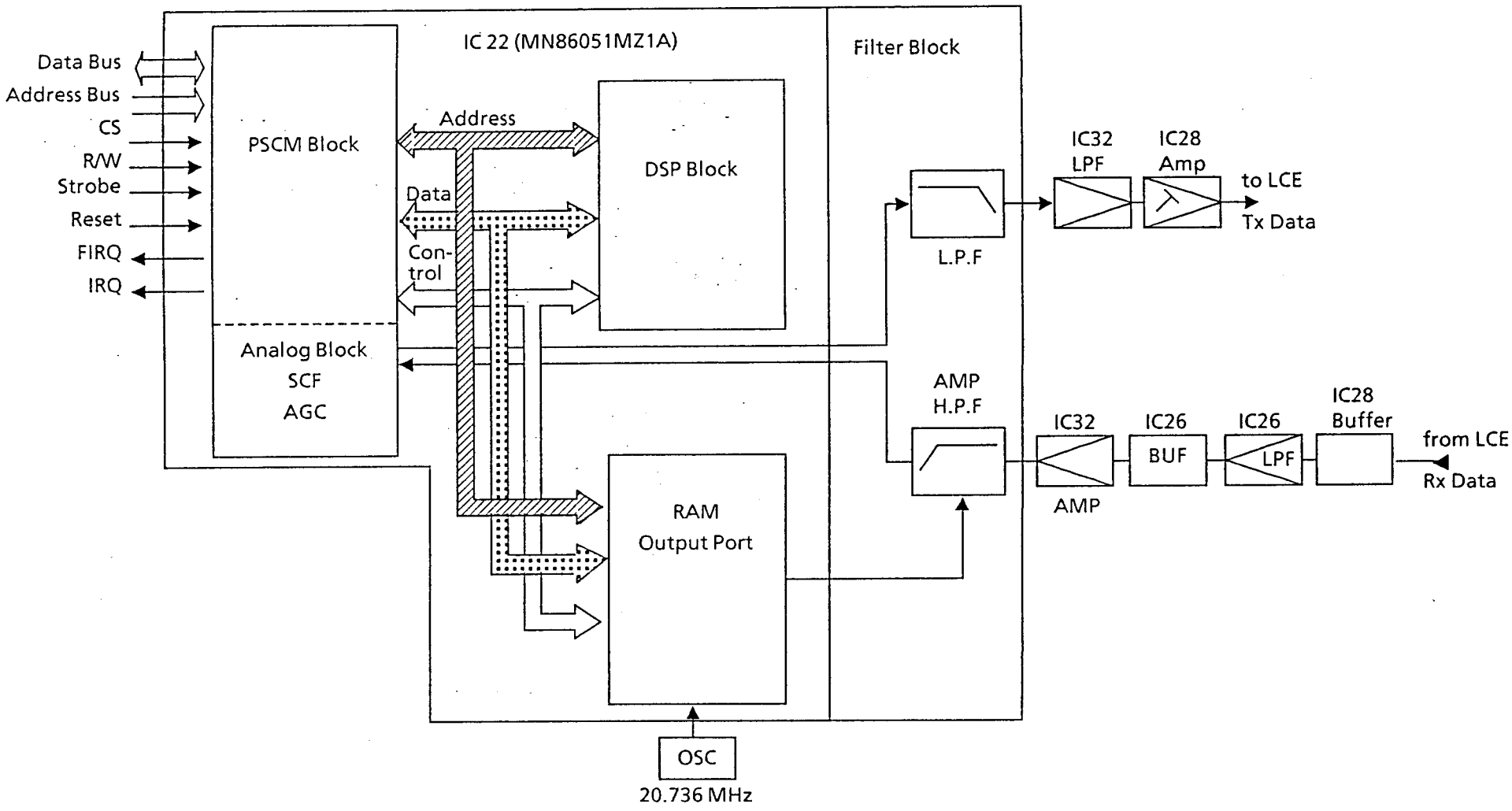
For receiving , coded data is decoded into picture signal be reversing the process and is stored in the image memory.

⑤ The CPU transfers this signal to the ISA2 by means of system DMA. The ISA2 then ransfers this image data to the GPM.

Transmitting / Reception Data Flow



6.5 MODEM Block



9600 BPS MODEM internal diagram

Function		
(1) V.29	(9600/7200 bps)	Transmit/Receive Data
(2) V.27 ter	(4800/2400 bps)	Transmit/Receive Data
(3) V.21 ch2	(300 bps FSK)	Transmit/Receive Handshakes
(4) Tonal Signal		Transmit/Receive
(5) DTMF Signal		Transmit
(6) HDLC		

The modem block is formed by the One-Tip Modem, DSP Block, RAM and I/O Block, operation amplifiers (IC26, 28, 32) and the peripheral wiring. The unnecessary zones are eliminated and adjustments are made after the 8 bit parallel transmission data converted to the serial data occurs within the One-Tip Modem.

It is possible to adjust the transmission level from 0~ – 15 dBm in 1 dB steps through the attenuator on the PSCM Block. Fine tuning adjustments are made by adjusting RV1.

The sensitivity of the signal received is determined by the attenuator in the One-Tip Modem, and a selection can be made from four levels (– 33, – 38, – 43, – 48 dBm). A cable equalizer has been included within the One-Tip Modem and a selection from four settings (0, 4, 8, 12 dB) can be made.

The reception signal coming from the LCU block passes through the filter block. The noise from unnecessary zones are eliminated.

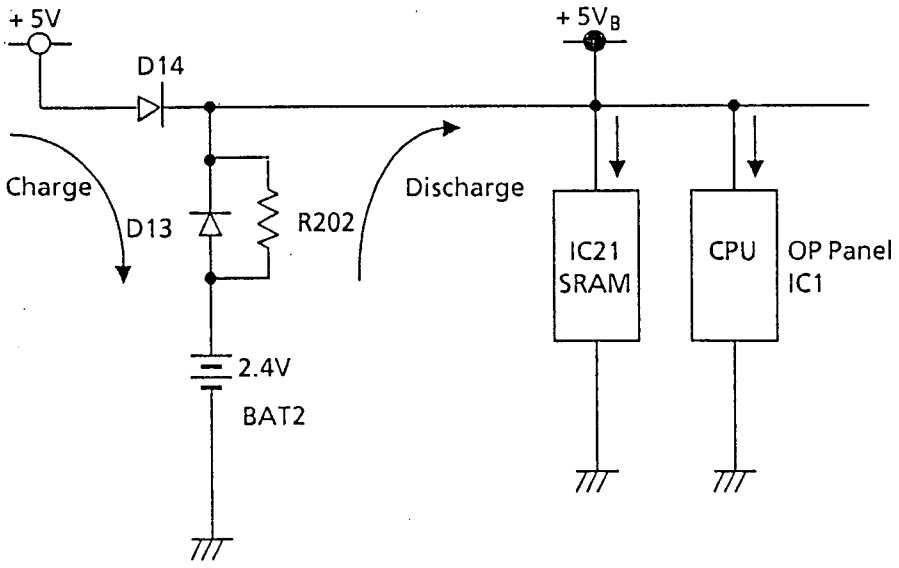
The signal then goes through the One-Tip Modem and is recovered within the One-Tip Modem as 8 bit parallel data and outputted through the system bus.

6.6 Battery Backup Circuit (S-RAM)

The circuit consists of BAT2, D13, D14, R202. The battery is a Ni-Cad type.

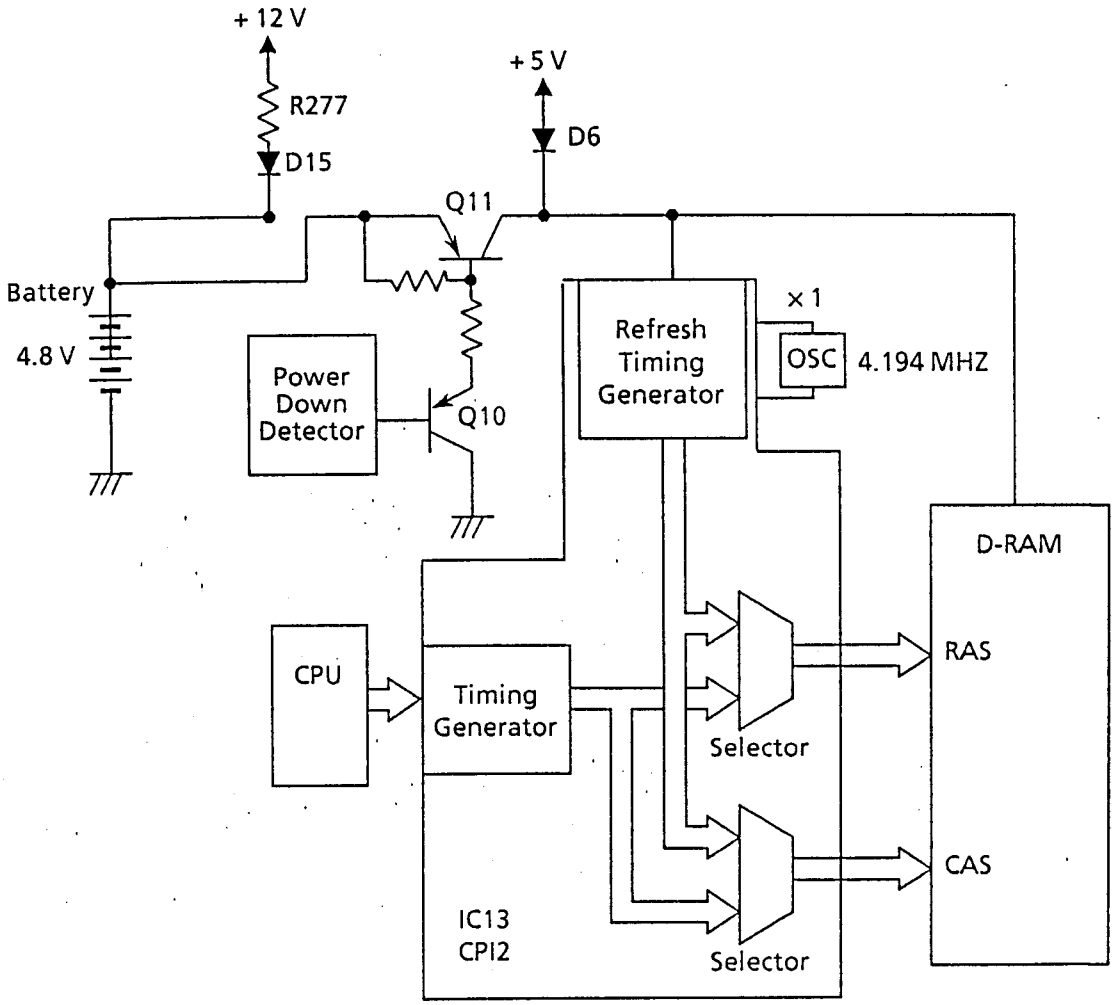
When power is interrupted, the battery backup circuit supplies current to retain data such as registered telephone numbers, parameter settings and clock function. A fully charged battery can supply enough current for approximately 10 days if the power is interrupted.

It is recommended to maintain the power "ON" for at lease 48 hours (after the machine is installed) to charge the battery fully.



6.7 Battery Backup Circuit (D-RAM) : for UF-312 Only

(1) Block Diagram



(2) Operation

When the power supply for this machine is on, Q11 goes off and + 5 V is supplied to the dynamic RAM through D6. During this time, the CPU carries out normal reading and writing. The CPU also carries out the CAS before the RAS. The nickel-cadmium (Ni-Cd) battery is charged with + 12 V through D15 and R277.

When the power supply for this machine is off, Q11 turns on, and power is supplied to the dynamic RAM and its peripheral circuits from the battery. The refresh timing generator switches to CAS-before-RAS refreshing. A completely charged battery can maintain the contents of the dynamic RAM for up to 1 hour.

Note: It takes at least 48 hours to fully charge the battery.

6.8 Picture Signal Conversion Circuit

This circuit consists of (a) ABC circuit, (b) shading correction circuit, (c) picture signal binary coding correction circuit and (d) reducing circuit.

(a) ABC (Automatic Background Control) Circuit

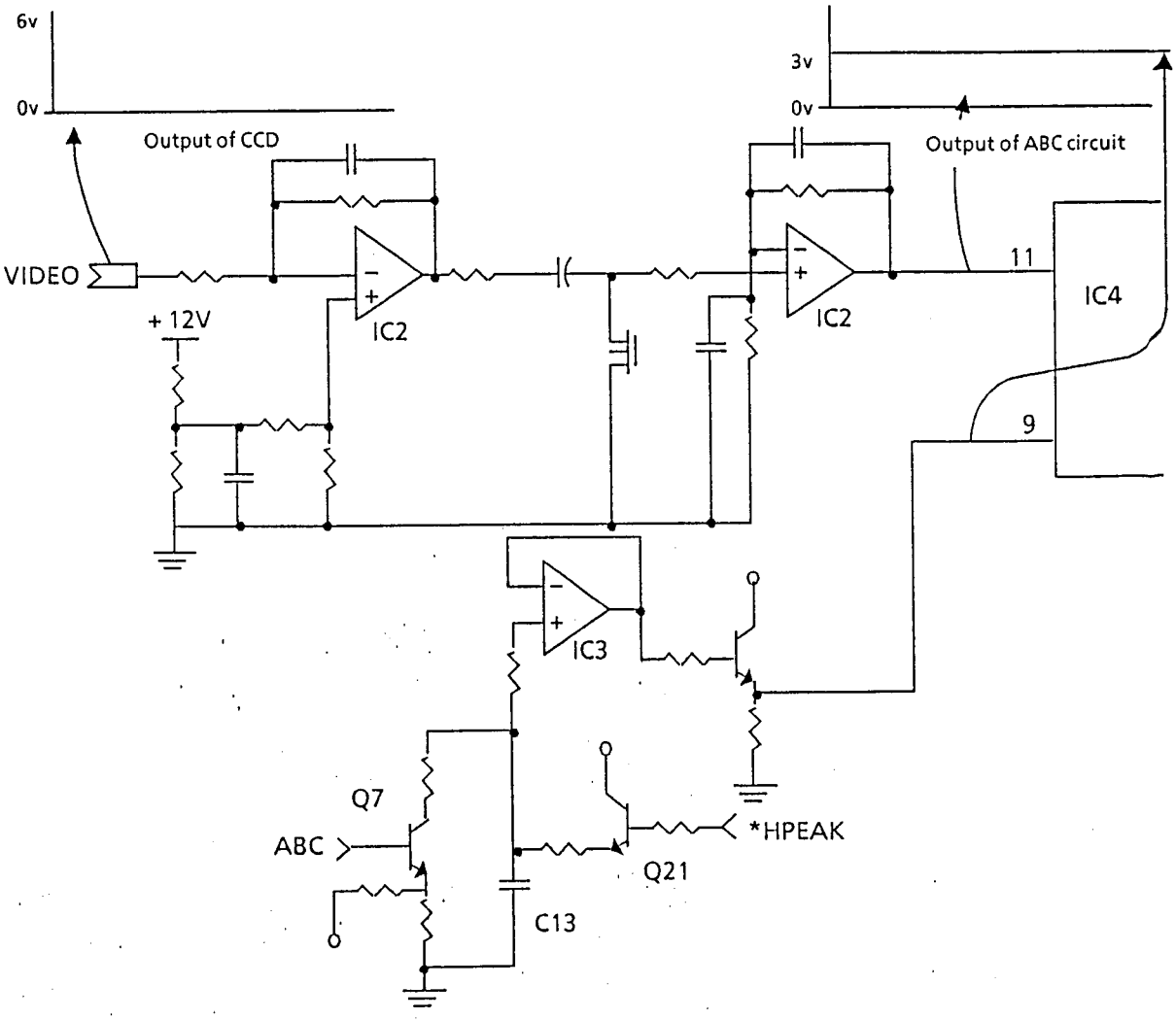
This circuit consists of IC2, IC3, IC4, IC10, Q7 and Q21. Its function is to prevent deterioration of picture quality due to dirt on the transmitting document or lowering of luminous energy of the LED.

The picture signal from CCD is amplified in IC 2 and inputted in the A/D converter IC4, where the picture signal is converted from analog to digital and the shading is corrected by IC10.

When the signal exceeds a certain level as the result of this amplification and correction, the overflow signal (IC10, pin 87) is outputted to IC14 and converted to a peak signal with controls Q21, this charges capacitor C13. This charging voltage is the reference voltage of IC4. When signal voltage rises, the charge voltage of C13 become higher.

When the picture signal level becomes lower, caused by the back ground color, etc., of a transmitting document, the overflow signal is not outputted from IC10, and the voltage across capacitor C13 decreases. This causes the reference voltage of IC4 to decrease.

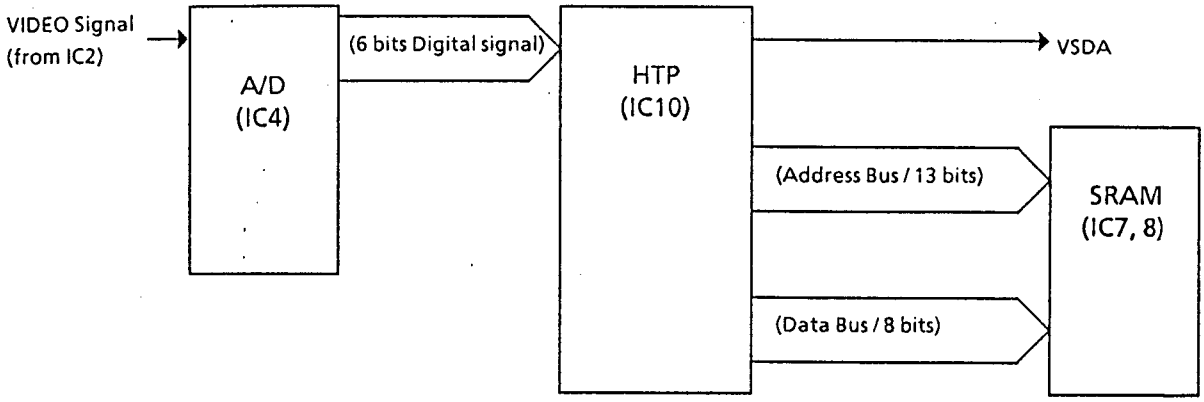
The output of the ABC circuit is kept constant to obtain an even picture quality regardless changes of the picture signal output level from CCD.



(b) Shading correction circuit

The circuit consists of IC10, IC8 and IC7. Its function is to correct for reduction in lamp intensity around the optical lens and LED intensity distortion due to shading of each bit.

This circuit scans the reference white on the transmitting document plate immediately before the document reaches the scanning position and writes a compensation value according to the distortion of the waveform at that time into the SRAM (IC7, 8). When the actual picture signal is inputted, the circuit corrects the picture signal shading according to this compensation value and outputs it as a 6-bit digital signal (IC4 DB0 to DB5). This shading correction is carried out for each page during transmission or copy.



(c) Picture signal binary coding correction circuit

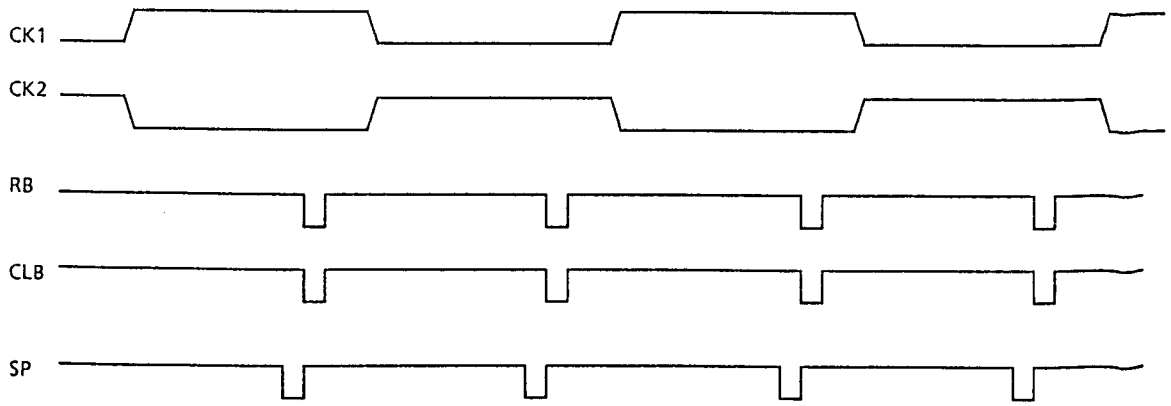
This circuit consists of IC10, IC8 and IC7. Its function is to obtain a binary coding signal corrects picture and error diffused binary coding signal of a false halftone signal, from a shaded picture signal.

(d) Reducing circuit

The reducing circuit is included in ISA2 (IC14).

6.9 CCD Drive Clock Generator Circuit

This circuit consists of circuit of HTP (IC14). Its function is to generate TG0, CK1, CK2, CLB, RB for CCD driving, and SP for sample holding. These clocks are generated by the system clock generator circuit. Its timing chart is shown below.



6.10 Line Control PC Board

(1) Block Diagram

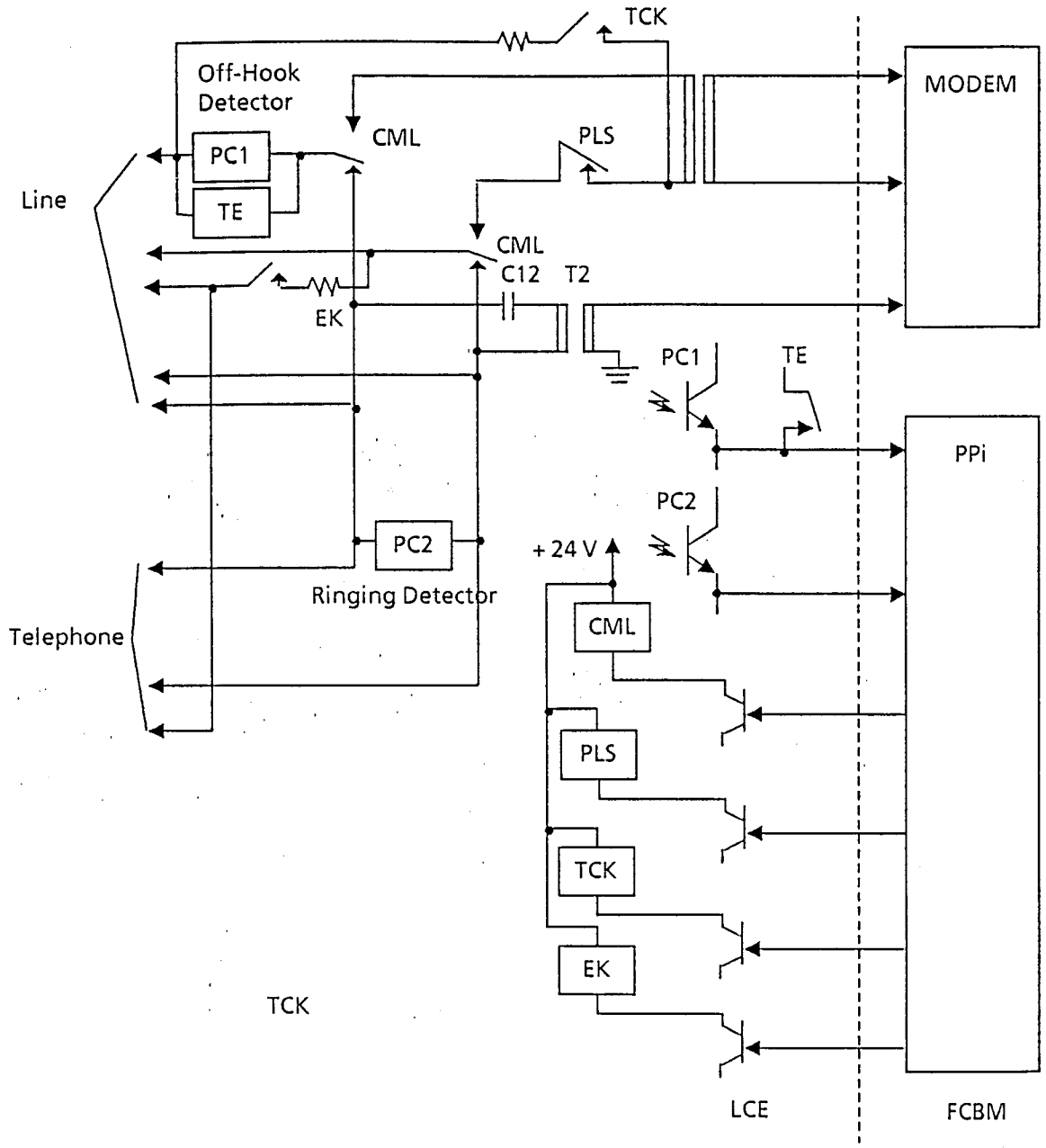


Figure 6.10.1 LCE Block Diagram

(2) Dial Pulse Generator

The circuit consists of the CML relay, PLS relay, TCK relay, EK relay and their peripheral circuits. This circuit generates dial pulses. The CPU in FCBM PC Board controls all dial pulse generation sequences. It turns relay CML, TCK, EK and PLS on and off through the PPI. The relay status during dialing is shown in Figure 6.10.2. When the absence of the terminating message is confirmed by the off-hook detector, the CPU turns CML, EK and TCK relay on to develop loop status (DC loop). After a few seconds, the CPU turns the PLS relay on and off to generate dial pulses making and breaking the loop.

(3) DTMF Tone Generator

The circuit is incorporated in the MODEM on the FCBM PC Board. The DTMF tone is conveyed to the telephone line using the same route as the facsimile signal. The DTMF tone selection is controlled by the CPU. The relay status during dialing is shown in Figure 6.10.3.

(4) Ring Detector

The circuit consists of the photo coupler PC2 and the input port of the PPI on the FCBM PC Board. PC2 detects the incoming ringing signal and transfers it to the PPI on the FCBM PC Board. The CPU observes the signal for a while to distinguish real ringing signals from the ones caused by chattering.

(5) TAM Interface

The circuit consists of capacitor C8, transformer T2 and the input port of PPI on the FCBR PC Board.

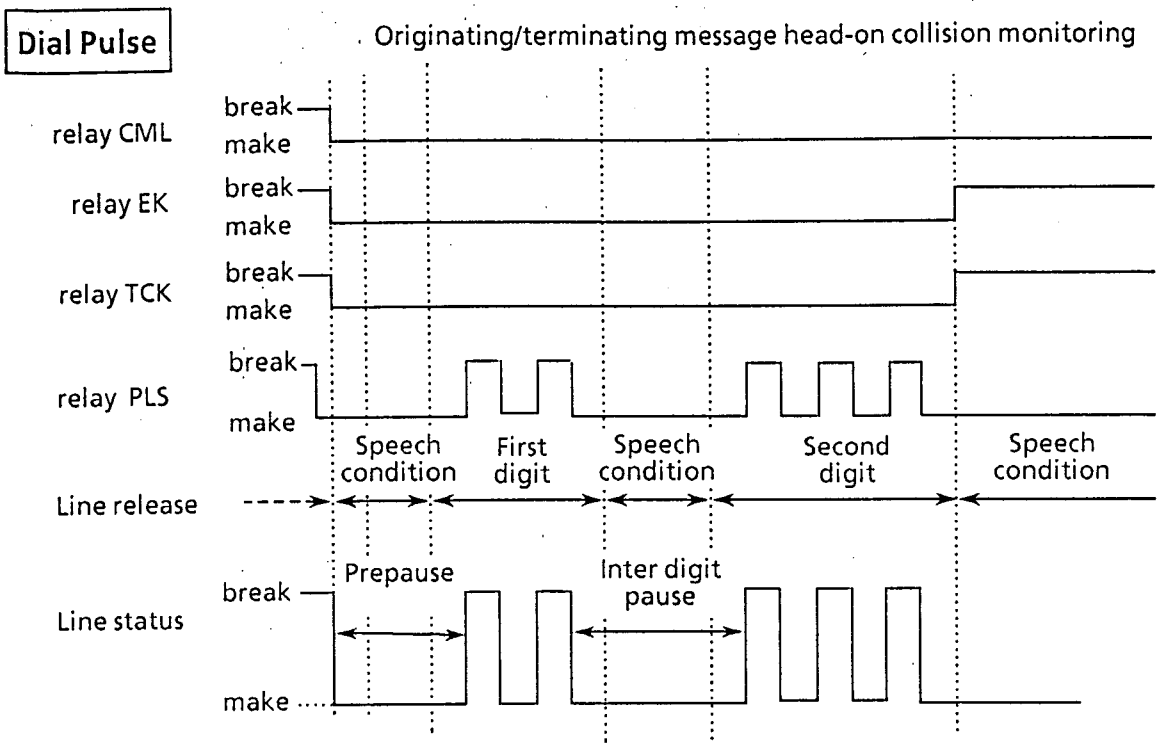


Figure 6.10.2 Pulse Dialing

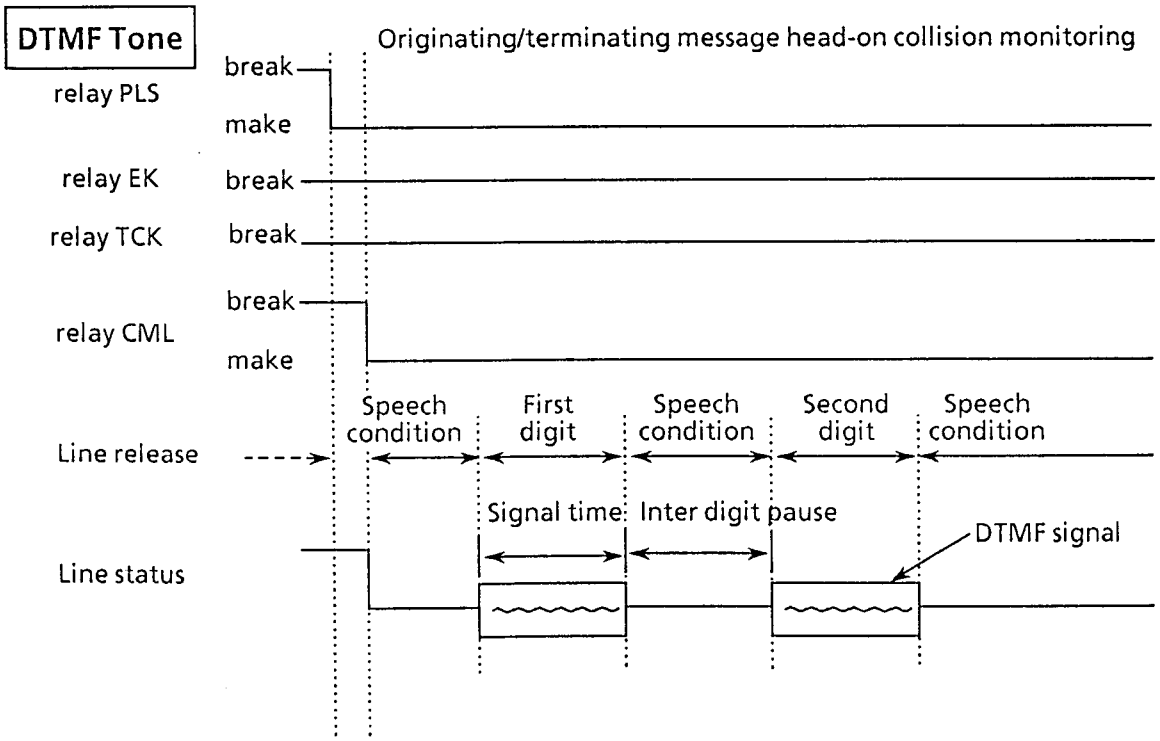
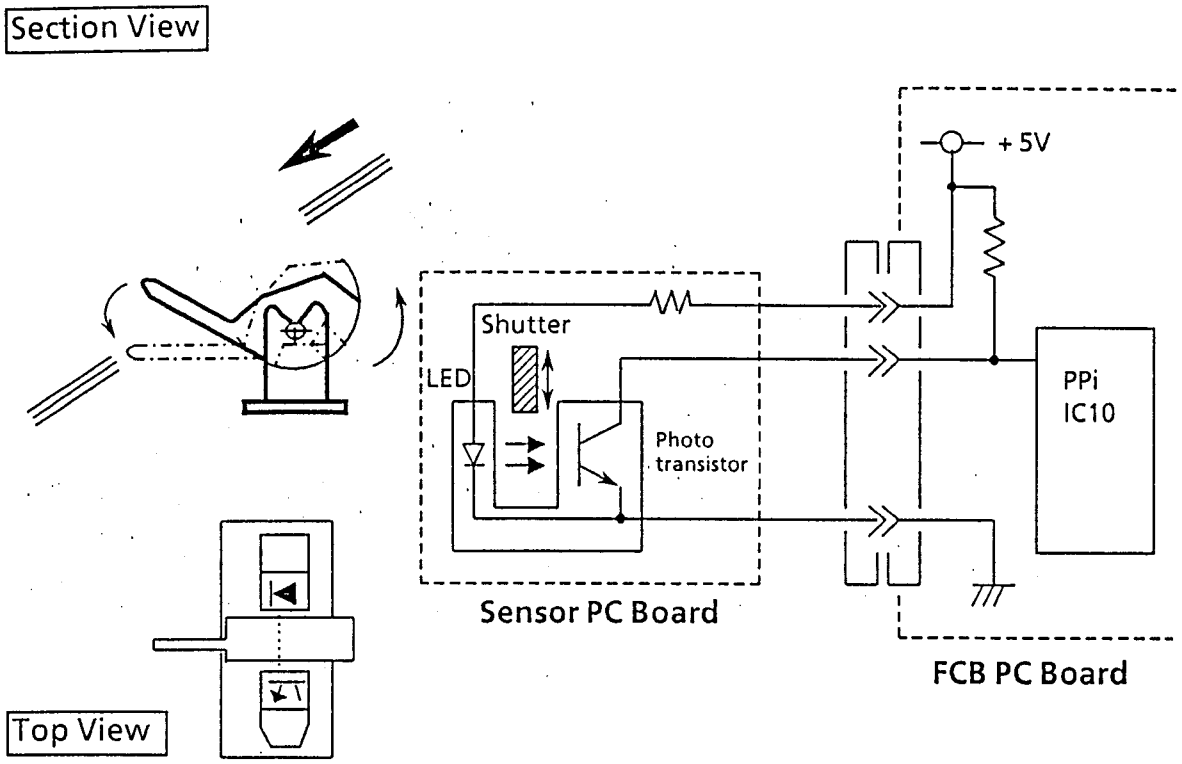


Figure 6.10.3 DTMF Tone

6.11 Sensor PC Boards (DZYNA1256 to 1259)

(1) Block Diagram



(2) Operation

The Sensor PC Boards consist of a shutter and photo-interrupt type sensor that detects the presence of a document on the ADF. When a document is inserted, the shutter is closed. The light from the LED is interrupted and the phototransistor turns off. The voltage at input port of IC10 (PPI) becomes high when a document is present. If no document is inserted, the shutter does not interrupt the photo path and the input port goes high.

6.12 Power Supply Unit

The power supply unit block diagram is shown in Figure 6.12.1.

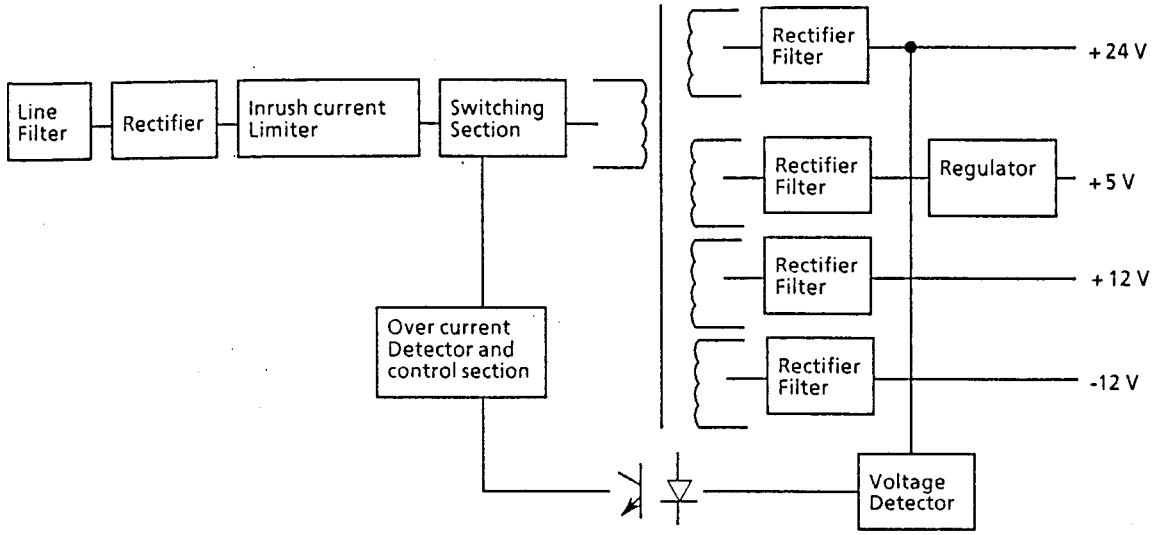
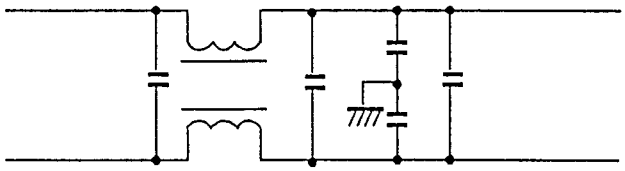


Figure 6.12.1 Block Diagram

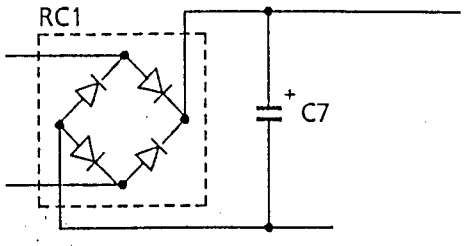
(1) Input Filter Circuit

The AC line voltage travels to a rectifying circuit through a line filter. The line filter removes noise which may otherwise go out to the AC line from the power supply unit and protects the power supply unit from spikes which comes into the unit from the AC line.



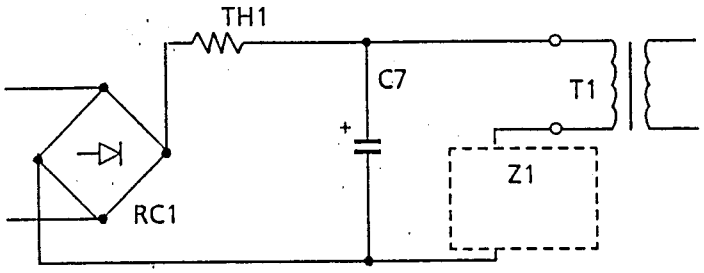
(2) Rectifying and Smoothing Circuit

When power is supplied to the power supply unit, the AC line voltage is rectified by rectifier RC1, which consists of 4 diodes. The output from RC1 is smoothed by capacitor C7.

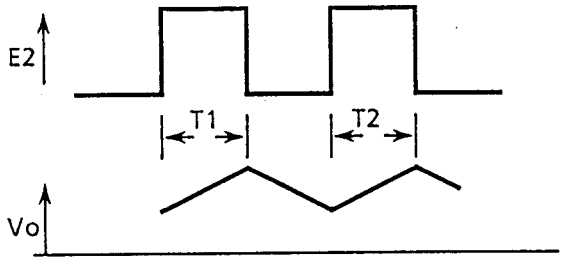


(3) Surge Current Protection Circuit

When capacitor C7 is not charged by the AC input, a surge current appears at the input side. The Power Thermistor TH1 then limits the surge current and Hybrid Z1 starts oscillation when capacitor C7 is charged.



The output voltage is stabilized by controlling the ON time of transistor.The switching of the transistor is controlled by the hybrid Z1.



(4) Secondary Circuit

The +24 V circuit is the main circuit and is stabilized by feed-back from the primary side.

The +12 V circuit is not stabilized.

The −12 V circuit is not stabilized.

The + 5 V circuit is stabilized by Z51.

6.13 Operation Panel

1. The operation panel performs the following processes at the same time:

   ① Key inputting

   ② LED, LCD displaying

   ③ Buzzer sounding

   ④ Data transmission/receiving

   The panel CPU is normally interfaced to the main CPU via the SIO port and receives various process request commands from the main CPU for processing.

   The keyed input signals are received by the panel CPU which transfers the data to the main CPU.

2. Interface to main CPU

   The interfacing between the main CPU and the panel CPU are all executed with command /responses in the following two formats:

   ① Command/response (1 byte) only

   ② Command/response (1 byte) + number of data + data 1 + data 2 ···· + data n + check sum.

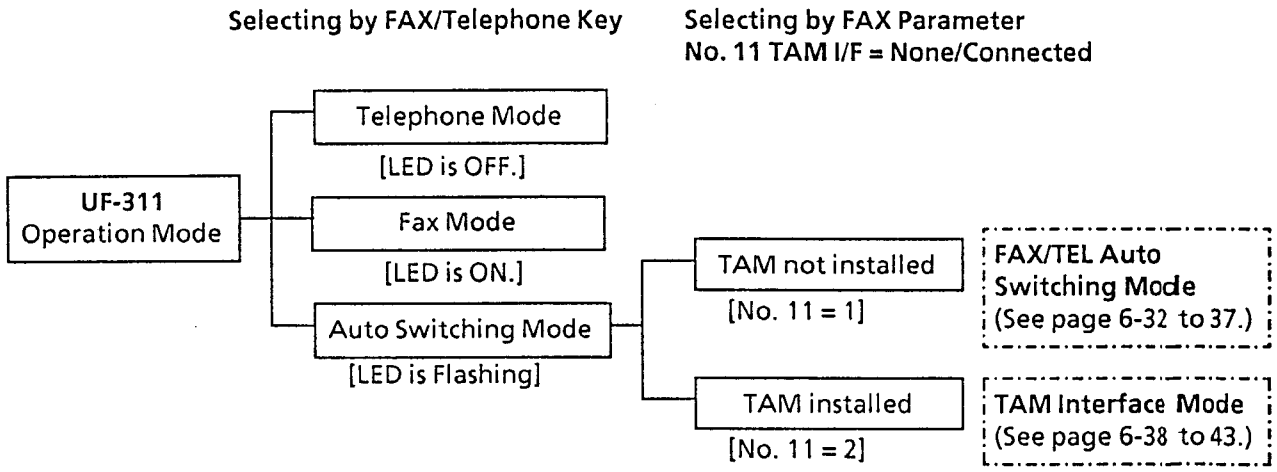
6.14 Automatic Switching Mode

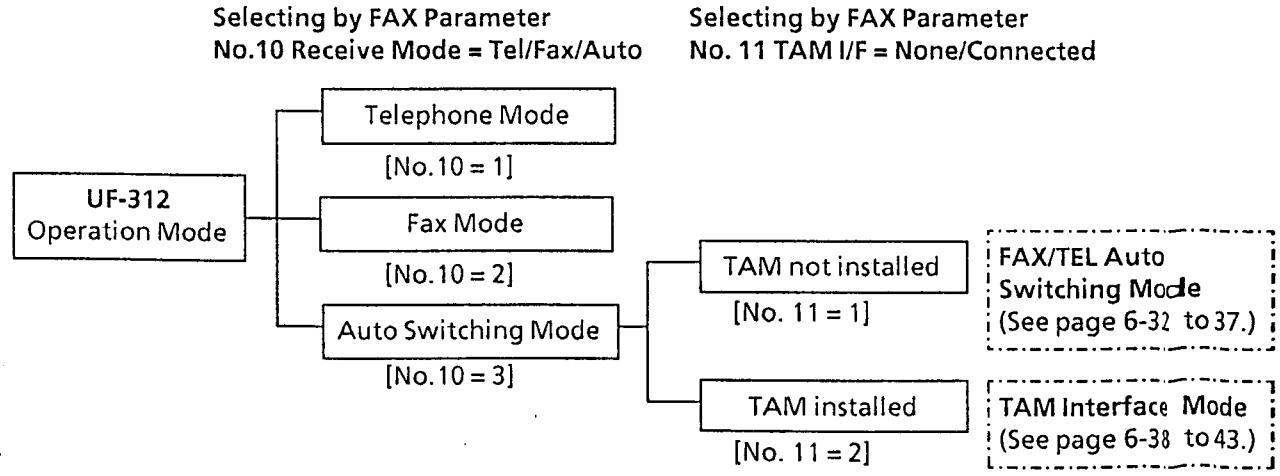
The UF-311/312 has 2 different automatic switching modes, Fax/Tel Auto Switching Mode and TAM Interface Mode. These modes are used for a single telephone line sharing for fax and voice.

1) Fax /Tel Auto Switching Mode
   This mode is used if the unit is connected on a telephone line which receives both fax and voice calls without a TAM (Telephone Answering Machine) connected.
2) TAM Interface Mode
   This mode is used if the unit is connected on a telephone line which receives both fax and voice calls and a TAM is connected.

6.14.1 Mode Selection

The operation mode can be selected by a combination of the FAX/Telephone key on the control panel and/or Fax parameters.





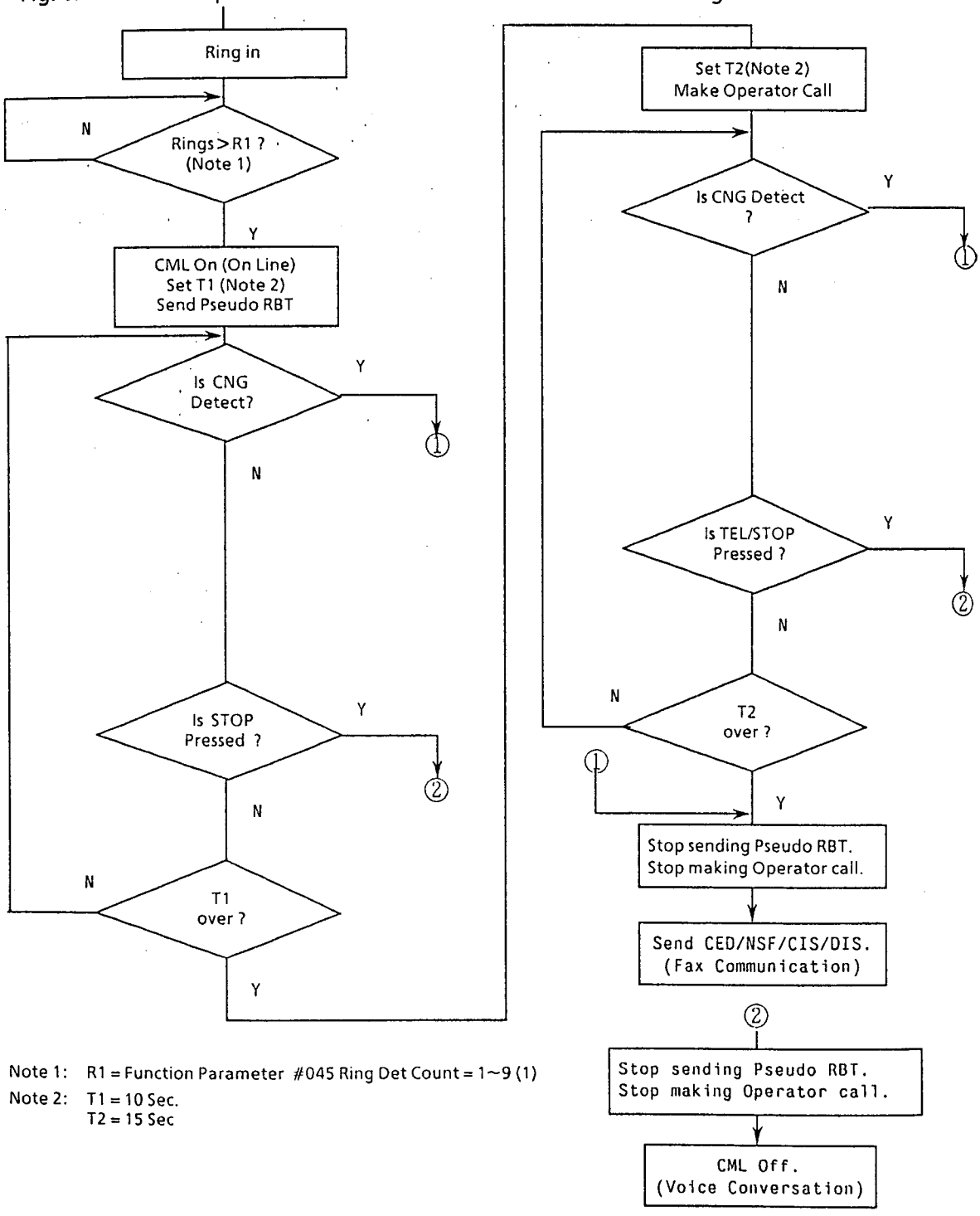
NOTE: For some countries, FAX/TEL Auto Switching feature mat not valid because of the country's regulation.

6.14.2 Fax/Tel Automatic Switching Mode

The Fax/Tel Automatic Switching Mode is designed for single telephone line sharing for fax and voice. When a call is received, the fax answers the call first then sends pseudo ring back tone to the calling side. During that time, the fax monitors whether the call is fax or not. If it is a fax call, the machine will automatically begin receiving document. If it is a voice call, the machine will starts beeping for operator attention.

1) Operation flow

Fig. 6.14.1 shows Operation flow of the Fax / Tel Automatic Switching Mode.



Note 1: R1 = Function Parameter #045 Ring Det Count = 1~9 (1)

Note 2: T1 = 10 Sec.
T2 = 15 Sec

Fig. 6.14.1

2) Signal Sequence

a) If calling party is a Fax machine (with CNG signal)

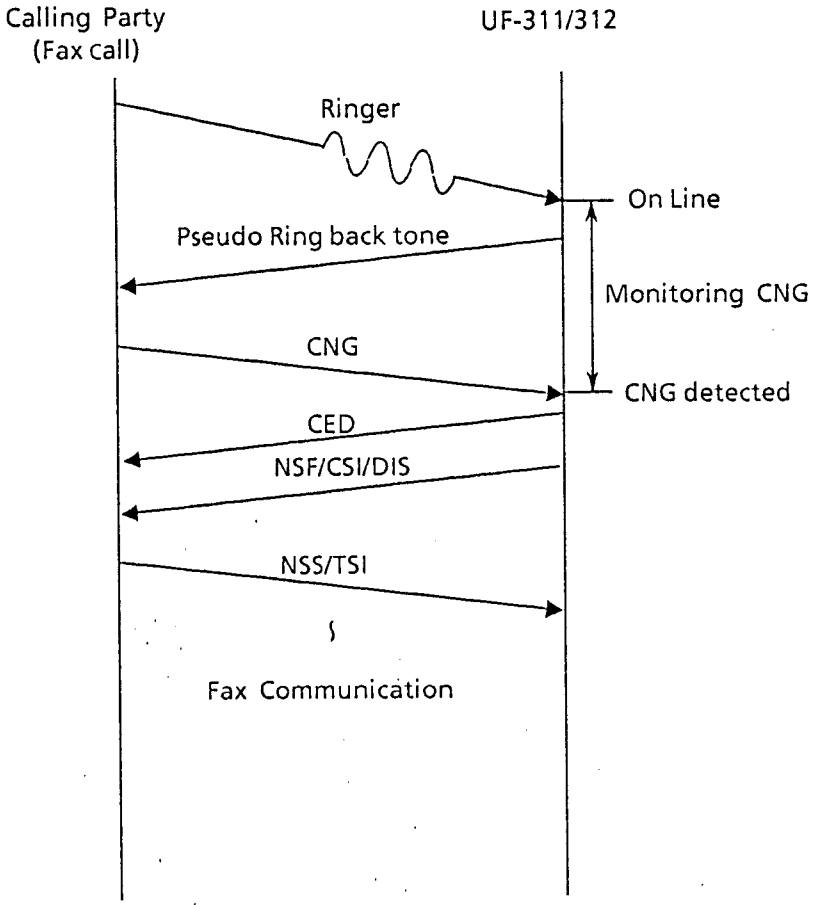


Fig. 6.14.2

Fig. 6.14.2 shows Signal sequence if calling party is a Fax machine (with CNG signal). If CNG signal is detected, the unit starts Fax communication procedure immediately.

b) If calling party is a Fax machine (without CNG signal)

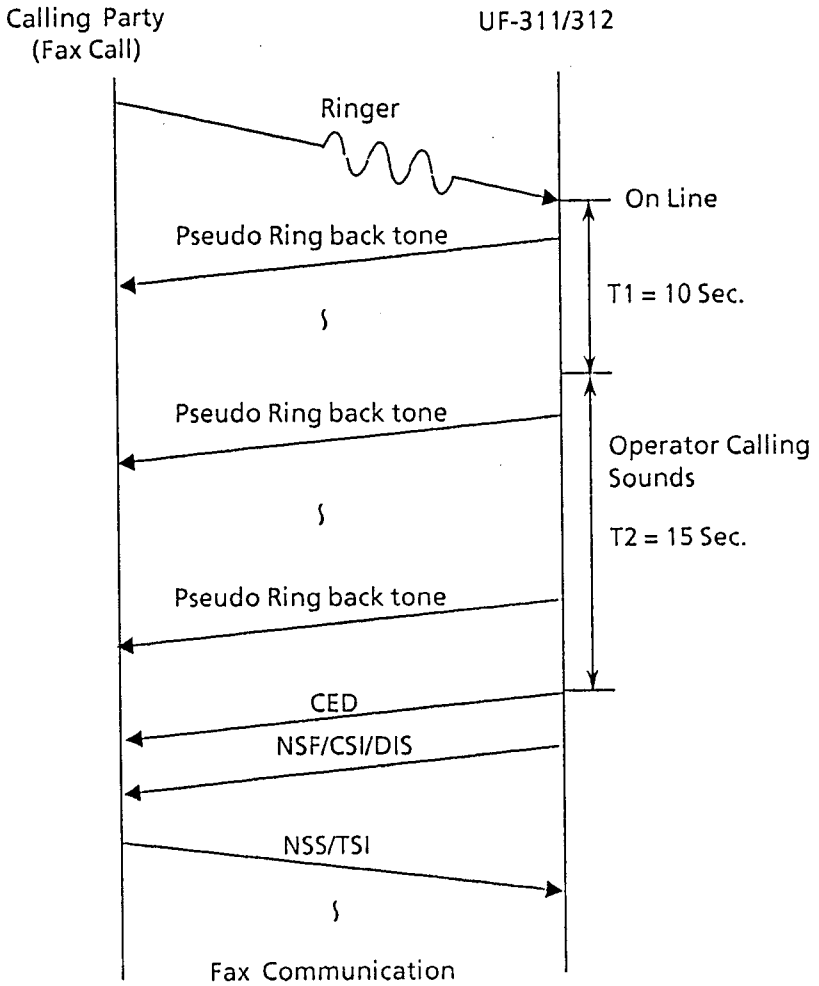


Fig. 6.14.3

Fig. 6.14.3 shows operational sequence if calling party is a Fax machine (without CNG signal).
The unit sends a Pseudo Ring back tone to the calling party. If the calling party is a Fax machine but does not send a CNG signal, the unit will start Fax procedure after generating an Operator Call through the built-in speaker.

c) If calling party is an operator

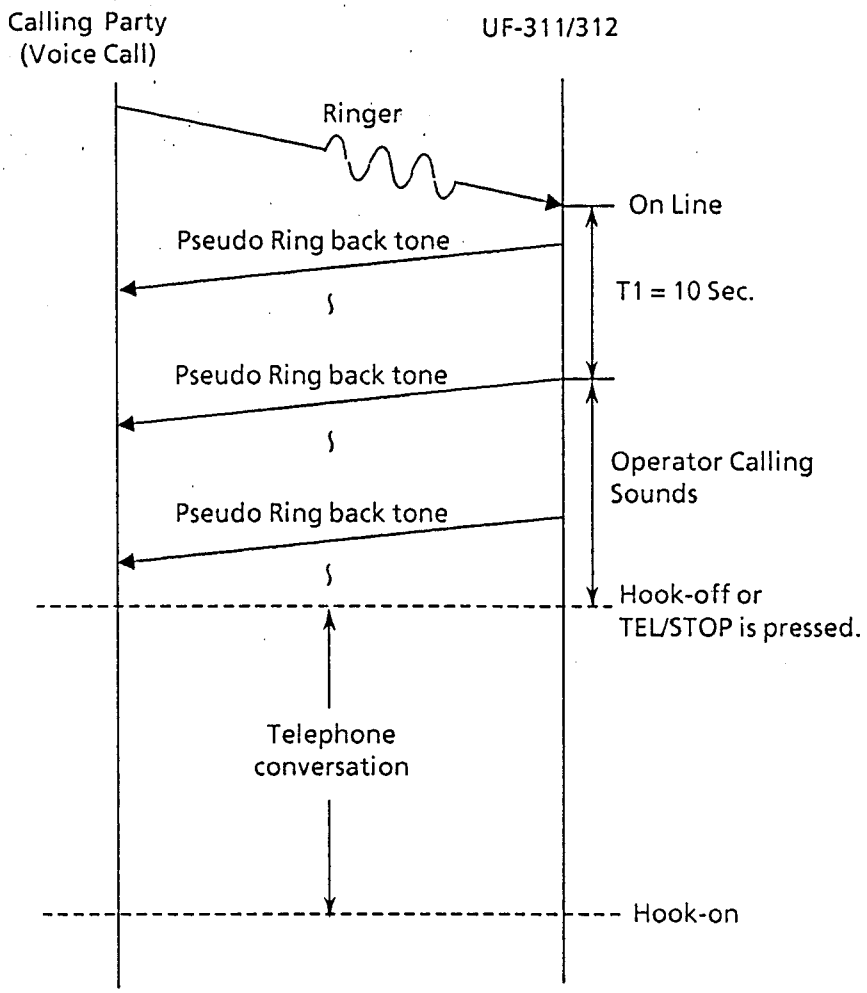


Fig. 6.14.4

Fig. 6.14.4 shows operational sequence if calling party is an operator.
The unit sends a Pseudo Ring back tone to the calling party. If the calling party is an operator, CNG will not be detected. The unit will generate an operator call through the built-in speaker.

d) In case operator at the UF-311/312 side does not pick-up the handset.

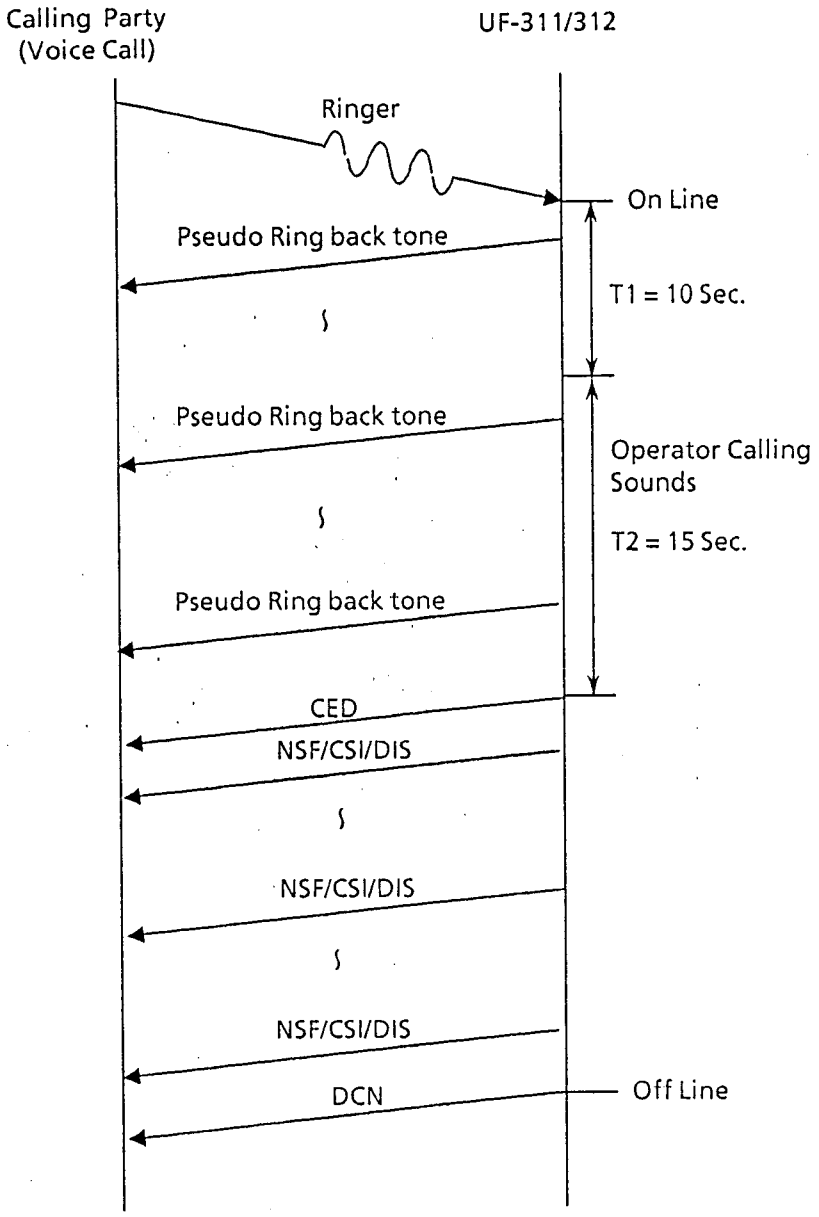


Fig. 6.14.5

Fig. 6.14.5 shows operational sequence if CNG is not detected and the operator of the UF-311/312 does not pick-up the handset. In this case, the UF-311/312 will send Fax communication signals (CED/NSF/CSI/DIS) at the end of sequence, even though the UF-311/312 dose not detect the CNG signal.

2) Pseudo Ring Back Tone (PRBT)

400Hz, modulated by 16Hz with an interval of 1 Sec. On and 5 Sec. Off.

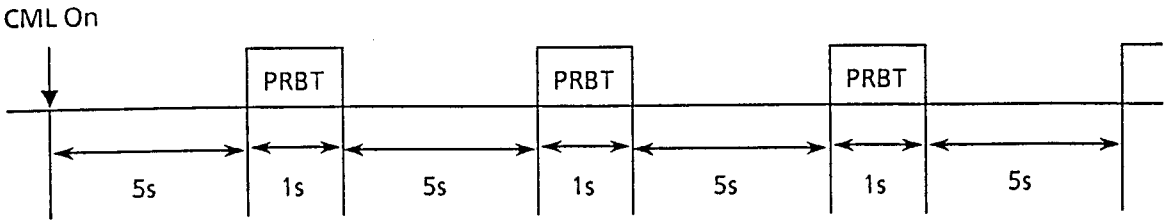


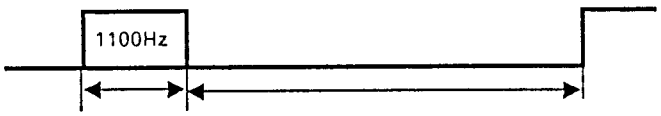
Fig. 6.14.6 Pattern of Pseudo Ring Back Tone

Off-time of pseudo ring back tone needs at least 4 sec. to detect CNG.

3) CNG Detection

CNG signal of 100Hz is checked, from On-edge to Off-edge as On-time and from Off-edge to On-edge as Off-time. If the detection time of On and Off is within a certain value, the signal is recognized as a CNG signal. If it is not a certain value, CNG detection will restart from the beginning.

The detection of CNG signal pattern is as shown below.



On: 300to 500 msec. Off: 2500 to 3500 msec.

Fig. 6.14.7: A valid CNG signal

6.14.3 TAM Interface

The TAM Interface Mode is designed for connection of a TAM (Telephone Answering Machine), which is owned by the user. This Interface automatically switches the telephone line between the Fax and the TAM. When a call is received, the TAM answers the call first. During that time, the fax also monitors the line to determine whether it is a voice or Fax call. If it is a voice call, the TAM will continue to function. If it is a fax call, the machine will automatically switch the line to fax and begin receiving document.

1) System Construction
   Construction of this system is shown in Fig. 6.14.9

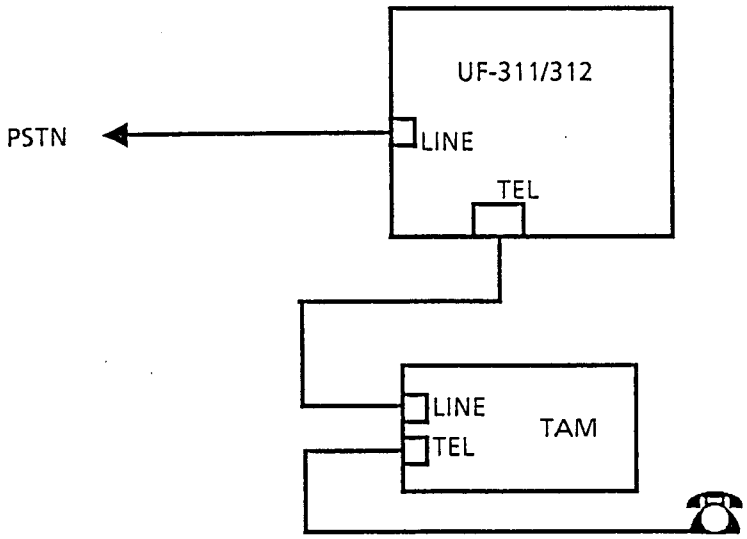
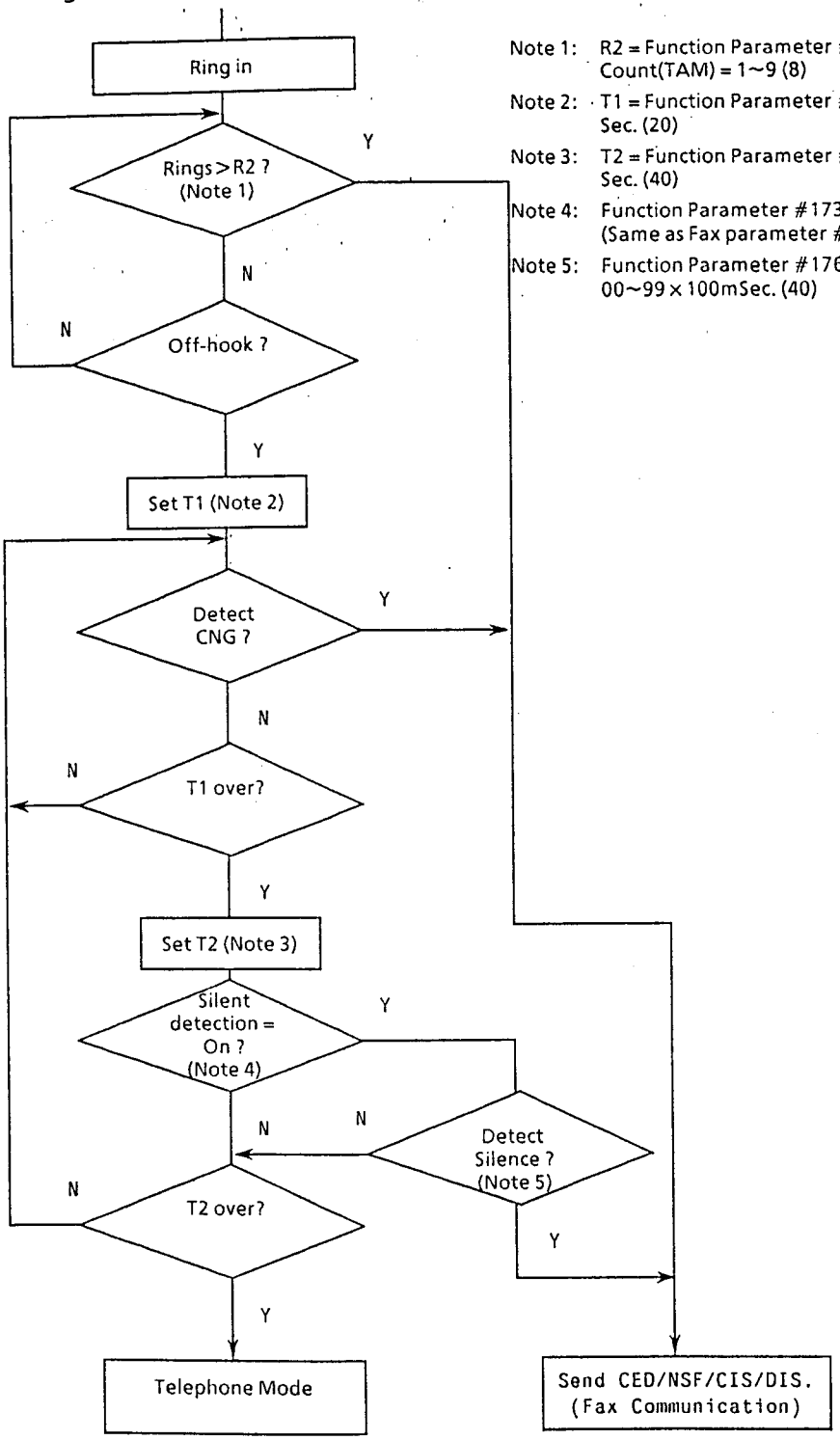


Fig. 6.14.9 System Construction

NOTE: The connection method for TAM depends onthe country's regulation.

2) Operation flow

Fig. 6.14.10 shows Operation flow of the TAM Interface Mode.



Note 1: R2 = Function Parameter #177 Ring Detection Count(TAM) = 1~9 (8)

Note 2: T1 = Function Parameter #174 Silent Detection delay = 00~99 Sec. (20)

Note 3: T2 = Function Parameter #175 Silent Detection timeout = 00~99 Sec. (40)

Note 4: Function Parameter #173 Silent detection = Off/On (On) (Same as Fax parameter #12)

Note 5: Function Parameter #176 Silent Integration Time = 00~99 x 100mSec. (40)

Fig. 6.14.10

3) Signal Sequence

a) In the case the Calling party is a Fax machine (with CNG signal).

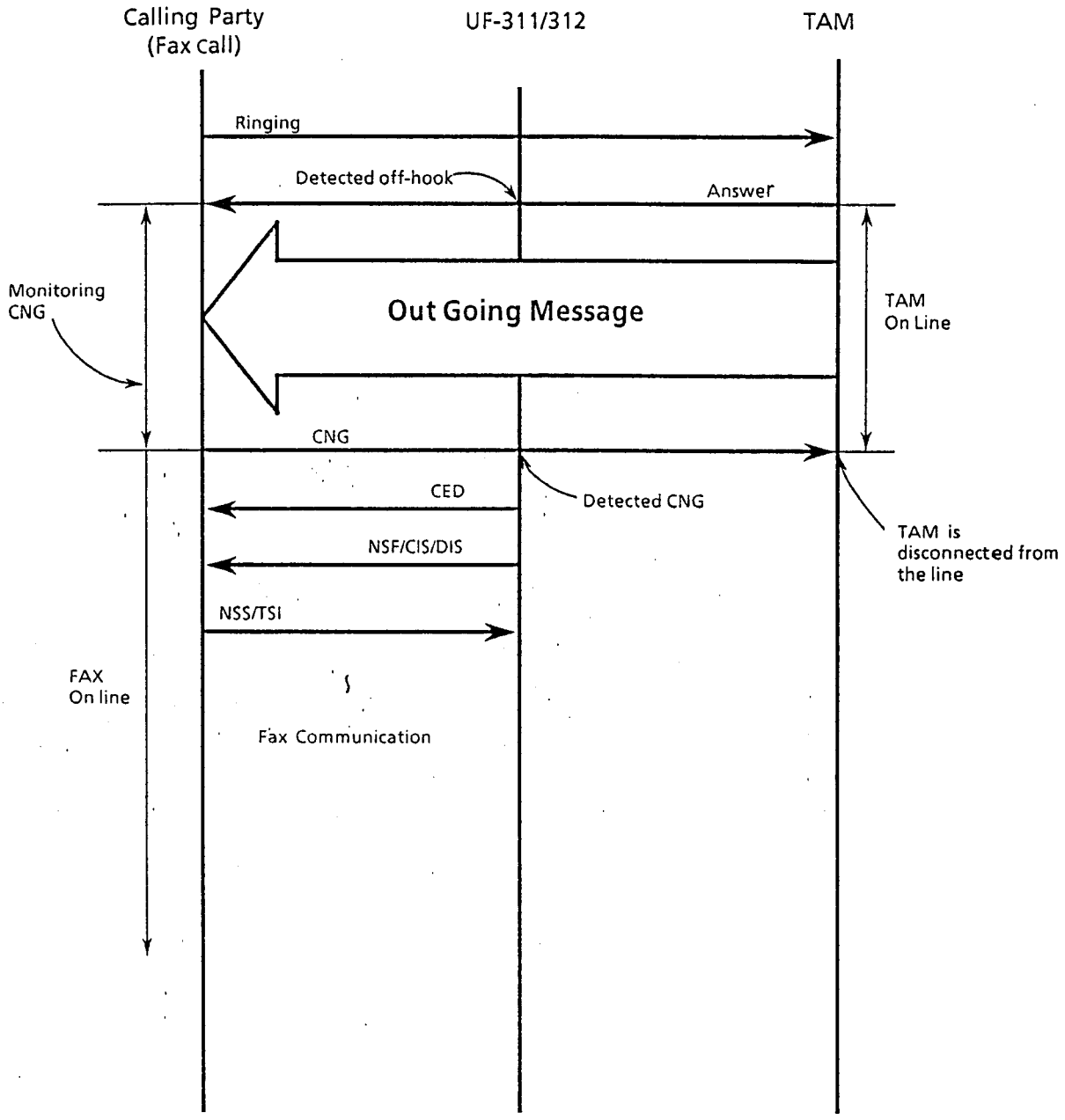


Fig. 6.14.11

Fig. 6.14.11 shows operational sequence in the case of the calling party being a Fax machine (with CNG signal). After a CNG signal is detected, the unit will start Fax communication immediately and TAM will be excluded from the line.

b) In the case the Calling party is a Fax machine (without CNG signal).

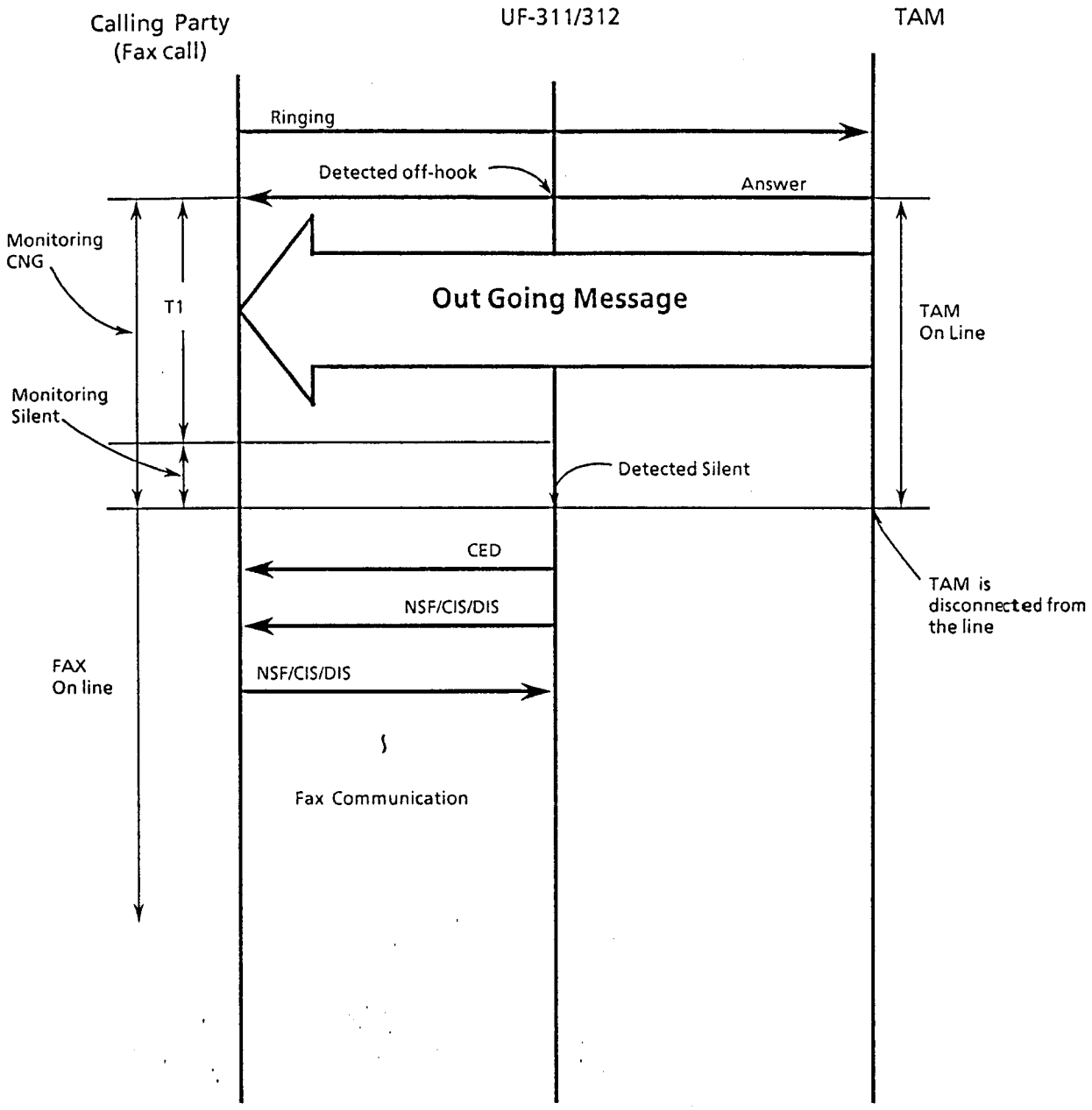


Fig. 6.14.12

Fig. 6.14.12 shows operational sequence in the case of the calling party being a Fax machine (with CNG signal). If calling Fax machine does not send CNG signal, the unit will start monitoring "Silent" after a delayed T1 period. When the unit detects a silence period, Fax communication will begin and TAM will be disconnected from the line.

T1: Function Parameter No.174 Silent detect delay = 00~99 Sec. (20)

c) In the case the Calling party is an operator.

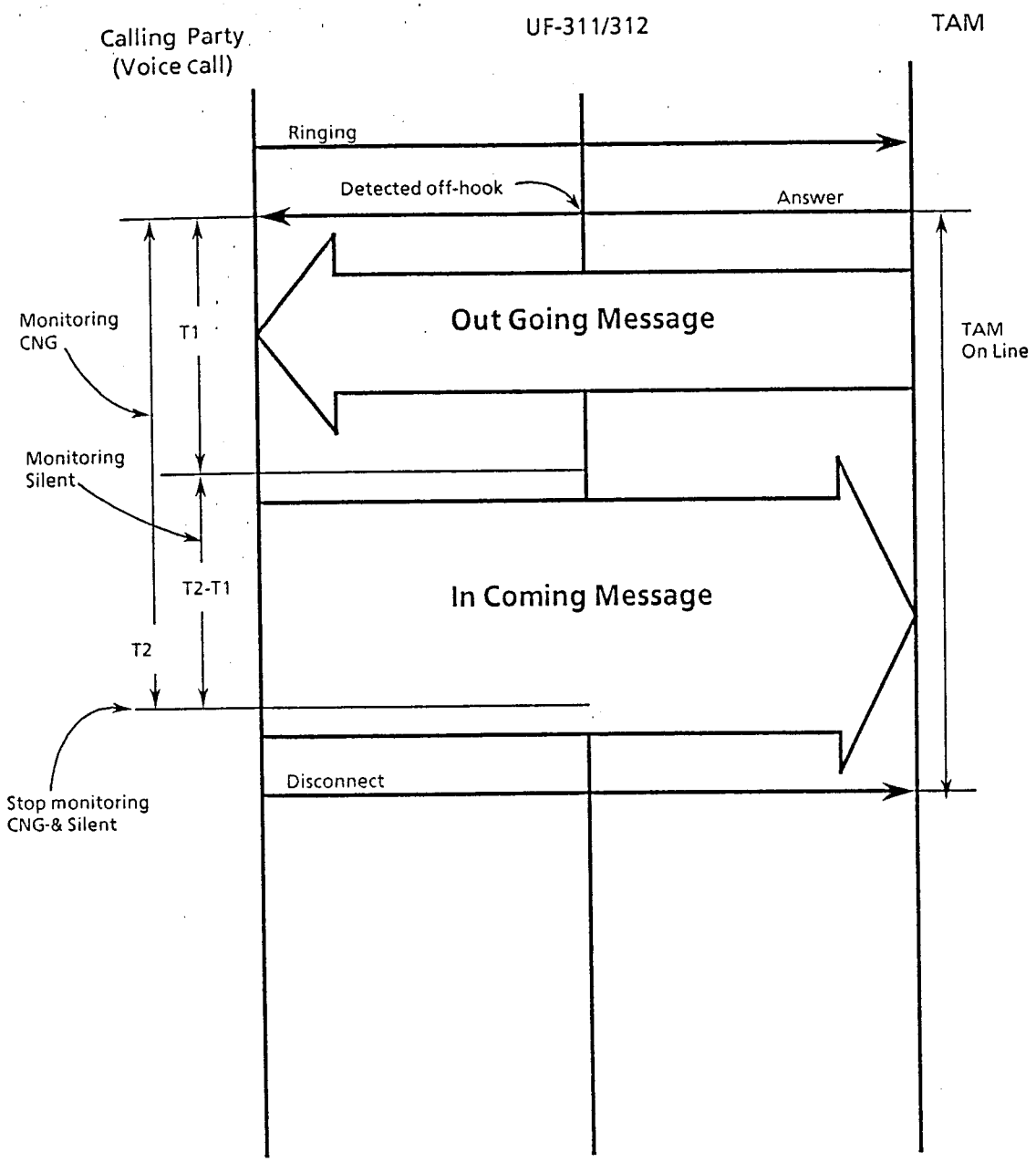


Fig. 6.14.13

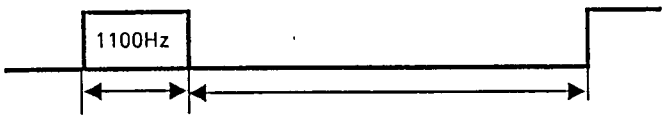
Fig. 6.14.13 shows operational sequence if calling party is an operator.
If unit detects neither a CNG nor a Silence period, the TAM will continuously be connected to the line until the end of this sequence.

T1: Function Parameter No.174 Silent detect delay = 00~99 Sec. (20)
T2: Function Parameter No.175 Silent detect time out = 00~99 Sec. (40)

4) CNG Detection

CNG signal of 100Hz is checked, from On-edge to Off-edge as On-time and from Off-edge to On-edge as Off-time. If the detection time of On and Off is within a certain value, the signal is recognized as a CNG signal. If it is not a certain value, CNG detection will restart from the beginning.

The detection of CNG signal pattern is as shown below.



On: 300to 500 msec. Off: 2500 to 3500 msec.

Fig. 6.14.14

5) Silent (No tone) Detection

As shown in Fig.6.14.15, after a preset delay period "Silent Detect delay", when a silent (No Tone) period has started, the integration timer will begin. When the timer reaches the setting time, then silent (No Tone) is detected. If any signal is detected, the integration value is cleared and integration starts once again.

The parameters regarding Silent detection are listed below:
Function Parameter No.173: Sielent Detection = Off/On (Same as Fax Parameter No.12)
Function Parameter No.174: Silent Detection Delay = 00~99 Sec.
Function Parameter No.175: Silent Detection Timeout = 00~99 Sec.
Function Parameter No.176: Silent Detection Integration Time = 00~99 x 100mSec.

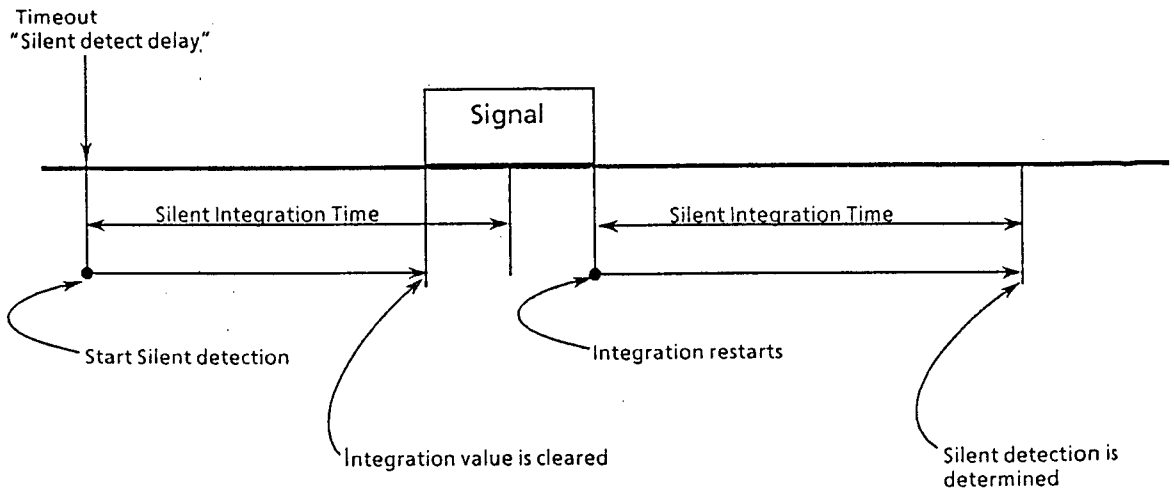


Fig. 6.14.15 Silent Detection

6.14.4 Hardware

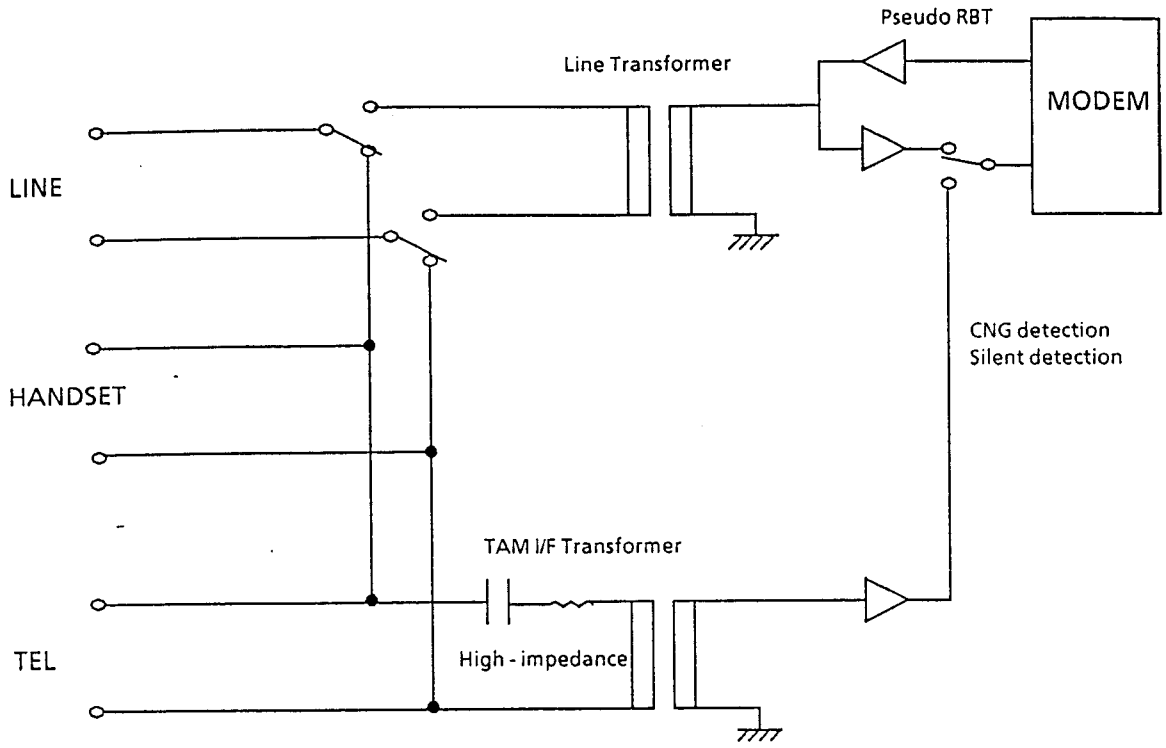


Fig. 6.14.16 CNG/Silent Detection, Pseudo RBT Generating Circuit

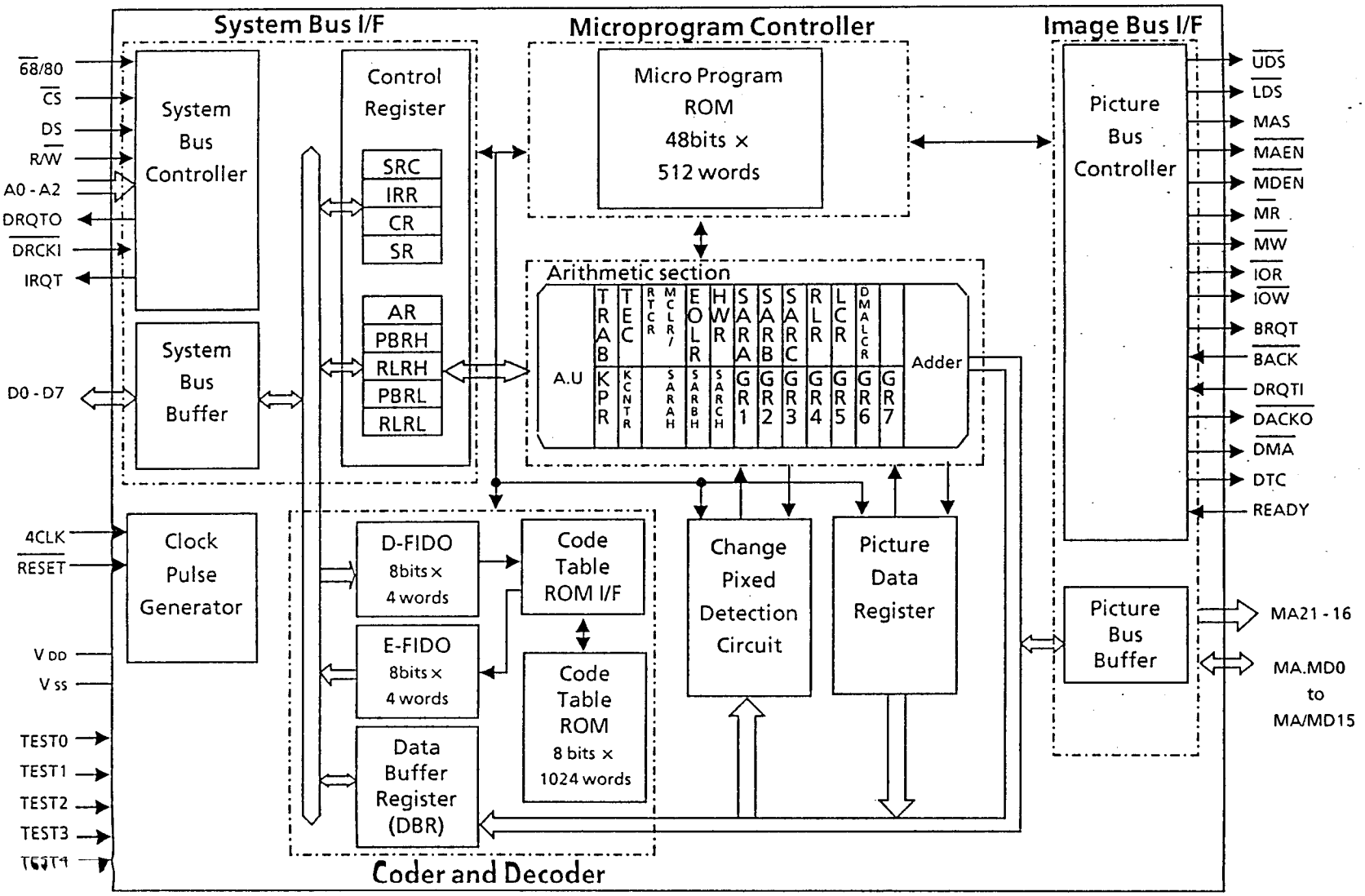
Fig. 6.14.16 shows CNG and Silent (No Tone) detection and Pseudo Ring Back Tone generating circuit. The CNG and Silent detection are checked by the Modem. The Ring Back Tone is also generated by the Modem.

1) CNG detection method in Fax / Tel Automatic Switching Mode
Under Fax /Tel Automatic Switching Mode, UF-311/312 detects CNG signal after the fax machine (UF-311/312) seizes the line. The Modem input is connected to the Line Transformer side, as with a normal fax communication.

2) CNG and Silent detection method in TAM Interface Mode
UF-311/312 detects CNG and Silent (No Tone) after the TAM seizes the telephone line. Therefore, CNG and Silent (No Tone) cannot be detected through the Line Transformer. The Modem input is switched to the TAM I/F Transformer which has a high impedance.

6.15 Block Diagram and Pin Assignment of Main Electrical Parts

6.15.1 DICEP-A (IC11) [Block Diagram]



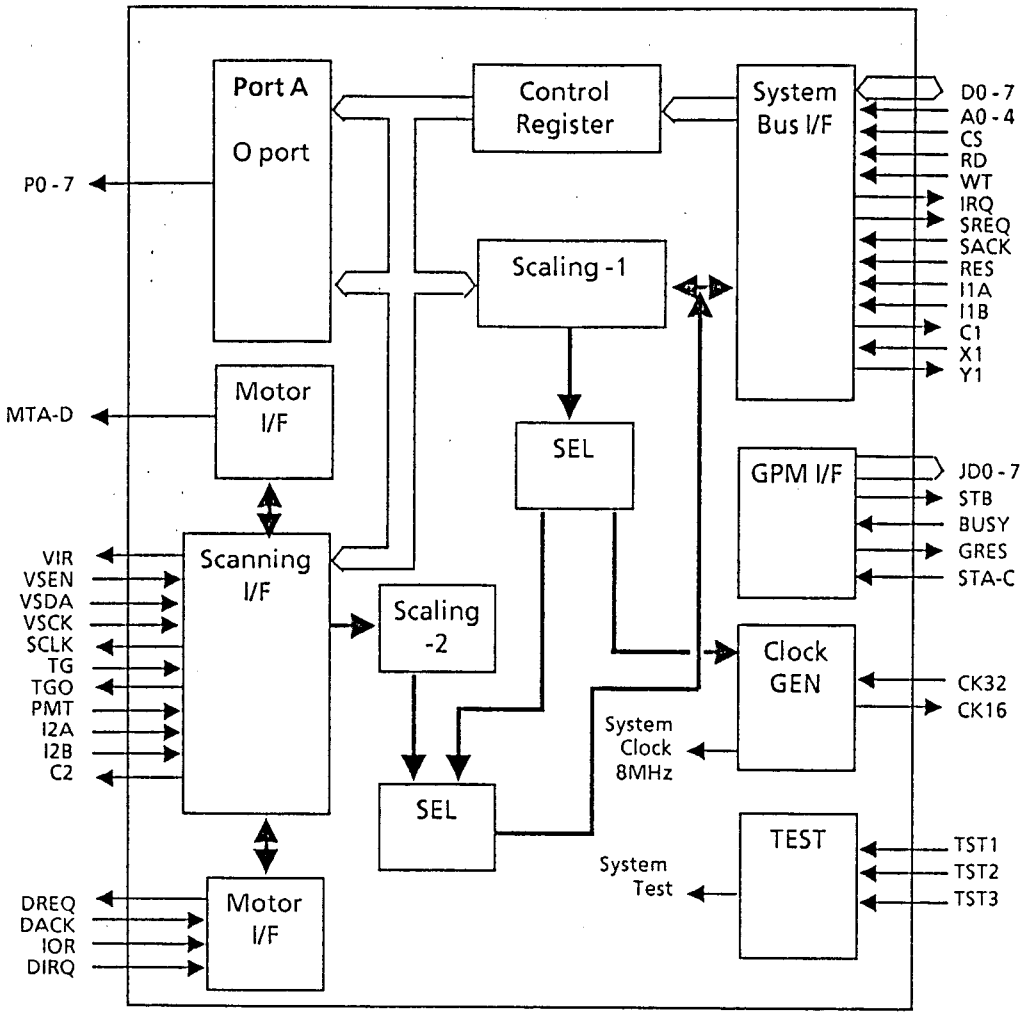
DICEP-A (IC11) [Pin Assignment] (1/2)

No.	Name	Type	Connection	Description
56	68/80	I		Select CPU Type Low = 68 type, High = 80 type
57 54 55	A0 A1 A2	I		Adress 0 - 2
64 62 65 63 67 66 68 69	D0 D1 D2 D3 D4 D5 D6 D7	I/O		Data 0 - 7
44	CS	I		Chip Select
45	DS	I		Data Strobe
42	R/W	I		Read/Write
59	RESET	I		Reset
19	4CLK	I		AClock
58	IRQT	O		Interrupt Request
47	DRQTO			DMA Request Output
46	DRCKI			DMA Acknowledge Input
52	BRQT			Bus Request
48	BACK			Bus Acknowledge
76	MAEN			Memory Address Enable
74	MAS			Memory Address Strobe
27	UDS			Upper Data Strobe
23	LDS			Lower Data Strobe
25	MDEN			Memory Data Bus Enable
79 77 3 78 5 2 6 4 8 7 12 9 14 13 15 16	MA/MD0 MA/MD1 MA/MD2 MA/MD3 MA/MD4 MA/MD5 MA/MD6 MA/MD7 MA/MD8 MA/MD9 MA/MD10 MA/MD11 MA/MD12 MA/MD13 MA/MD14 MA/MD15	I/O		Memory Address Data Bus 0 - 15

DICEP-A (IC11) [Pin Assignment] (2/2)

No.	Name	Type	Connection	Description
71 11 30 31 50 51	MA16 MA17 MA18 MA19 MA20 MA21	I/O		Memory Address Bus 16 - 21
26	MR	I/O		Memory Read
28	MW	I/O		Memory Write
35	IOR	I/O		I/O Read
36	IOW	I/O		I/O Write
39	DRQTI	I		DMA Request Input
38	DACKO	O		DMA Acknowledge Out put
32	DMA	O		Direct Memory Access
37	DTC	O		DMA Terminal Count
73	READY	I		Memory or I/O Status Low = Busy High = Ready
29 49 72	V_{DD1} V_{DD2} V_{DD3}	I		+ 5V
10 17 34 53 70 75	V_{SS1} V_{SS2} V_{SS3} V_{SS4} V_{SS5} V_{SS6}	I		GND
18 22 24 33 43	TEST0 TEST1 TEST2 TEST3 TEST4	I		TEST

6.15.2 ISA2 (DZZNS58053) [Block Diagram] (IC14)



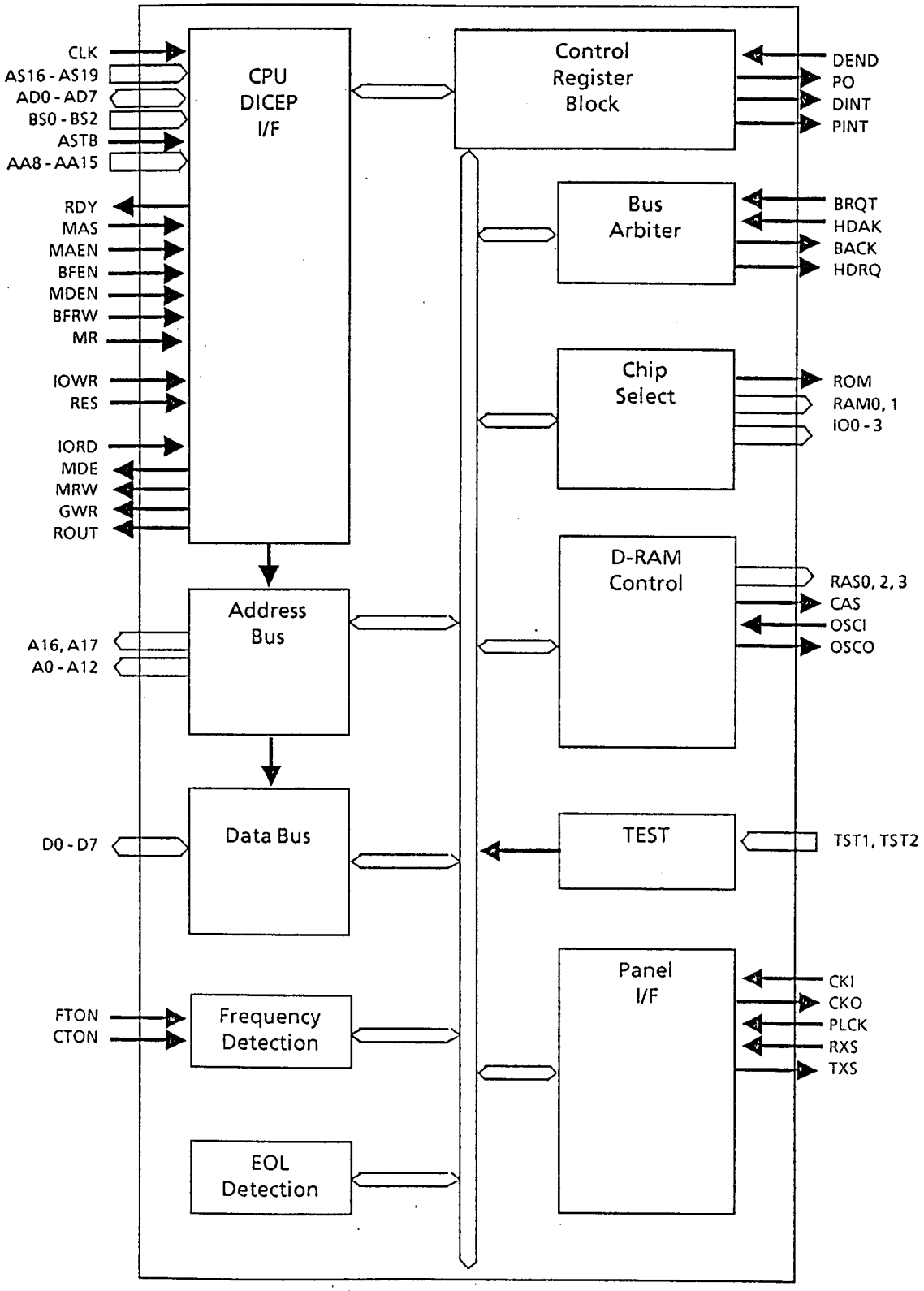
ISA2 (DZZNS58053:IC14) [Pin Assignment] (1/2)

No.	Name	Type	Connection	Description
8 9 10 11 28 29 30 31	D0 D1 D2 D3 D4 D5 D6 D7	3 state I/O	CPU	System Data Bus
46 45 44 43 42	A0 A1 A2 A3 A4	I	CPU	Register Select
55	*CS	I	CPU	Chip Select
57	*RD	I	CPU	Connect to "RD" of CPU
56	*WT	I	CPU	Connect to "WT" of CPU
80	*IRQ	O	CPU	Interrupt Request
59	SREQ	O	CPU	System DMA Request Output
58	*SACK	I	CPU	System DMA Acknowledge Input
54	*RES	I	CPU	Reset
51	CK32	I	CPU	32MHz Input
34	CK16	O	CPU	16MHz Out put
50 49 48	TST1 TST2 TST3	I	CPU	Test
74 75 76 77 14 15 16 17	JD0 JD1 JD2 JD3 JD4 JD5 JD6 JD7	O	GPM	Transfer Data to GPM
78	*STB	O	GPM	Data Strobe
61	BUSY	I	GPM	Plotter Busy Status Signal
79	*GRES	O	GPM	GPM Reset Signal
62 63 64	STAA STAB STAC	I	GPM	GPM Status Input
69	DREQ	O	CODEC	Image Data DMA Request
68	*DACK	I	CODEC	Image Data DMA Acknowledge
67	*IOR	I	CODEC	Connect to "IOR" of CODEC
41	DIRQ	I	CODEC	Interrupt Signal from CODEC
18 19 20 21	*MTA *MTB *MTC *MTD	O	Motor	Motor Control Signal

ISA2 (DZZNS58053:IC14) [Pin Assignment] (2/2)

No.	Name	Type	Connection	Description
2	MCNT	O	Scanner Controller	Motor Current Select Signal
27	*VIR	O	Scanner Controller	Video Input Ready
38	*VSEN	I	Scanner Controller	Video Signal Enable
37	VSDA	I	Scanner Controller	Video Signal Data
47	VSCK	I	Scanner Controller	Video Signal Clock
71	SCLK	O	Scanner Controller	Scanning LSI System Clock
35	*TG	I	Scanner Controller	Transfer Gate Pulse Signal for CCD
36	*PMT	I	Scanner Controller	Pulse Motor Start Signal
26	TGO	O	Scanner Controller	Inverted Output of "*TG"
65 66 70	I1A I1B C1	I I		I1A · I1B = C1
40 39 25	I2A I2B C2	I I O		$\overline{I2A \cdot I2B} = C2$
60 1	X1 Y1	I O		$\overline{X1} = Y1$
24 23 22 7 6 5 4 3	P0 P1 P2 P3 P4 P5 P6 P7	O		Port Output
13 32 53 72	V_{CC} V_{CC} V_{CC} V_{CC}			
12 33 52 73	GND GND GND GND			

6.15.3 CPI2 (DZZNS58052) [Block Diagram] (IC13)



DZZNS58052 (CPI2):IC13 [Pin Assignment] (1/3)

No.	Name	Type	Connection	Description
70	CLK	I	CPU	8MHz Clock
78	BRQT	I	DICEP	Bus Request
1	BACK	O	DICEP	Bus Acknowledge
2	HDRQ	O	CPU	Hold Request
79	HDAK	I	CPU	Hold Acknowledge
64 63	OSCI OSCO	I	Crystal	Oscillator In, Out
14	RDY	O	CPU	Ready
62 61	TEST1 TEST2	I	GND	Test
54 55 56	BS2 BS1 BS0	I	CPU	Bus Status
42 43 44 45	AS19 AS18 AS17 AS16	I	CPU	Address Bus/Processor Status
46 47 48 49 50 51 52 53	AA15 AS14 AS13 AS12 AS11 AS10 AS9 AS8	I	CPU	Address Bus
13 11 9 84 86 88 92 94	AD7 AD6 AD5 AD4 AD3 AD2 AD1 AD0	I/O	CPU	Address / Data Bus
57	ASTB	I	CPU	Address Strobe
74	MAS	I	DICEP	Memory Address Strobe
76	MAEN	I	DICEP	Memory Address Enable
72	BFEN	I	CPU	Buffer Enable
71	BFRW	I	CPU	Buffer Read Write
75	MDEN	I	DICEP	Memory Data Bus Enable
73	MR	I	DICEP	Memory Read
58	IOWR	I	CPU	I/O Write
60	RES	I	CPI	Reset
24	PO	O		Port Out
97	ROUT	O	CPU	Reset Out

DZZNS58052 (CPI2) :IC13 [Pin Assignment] (2/3)

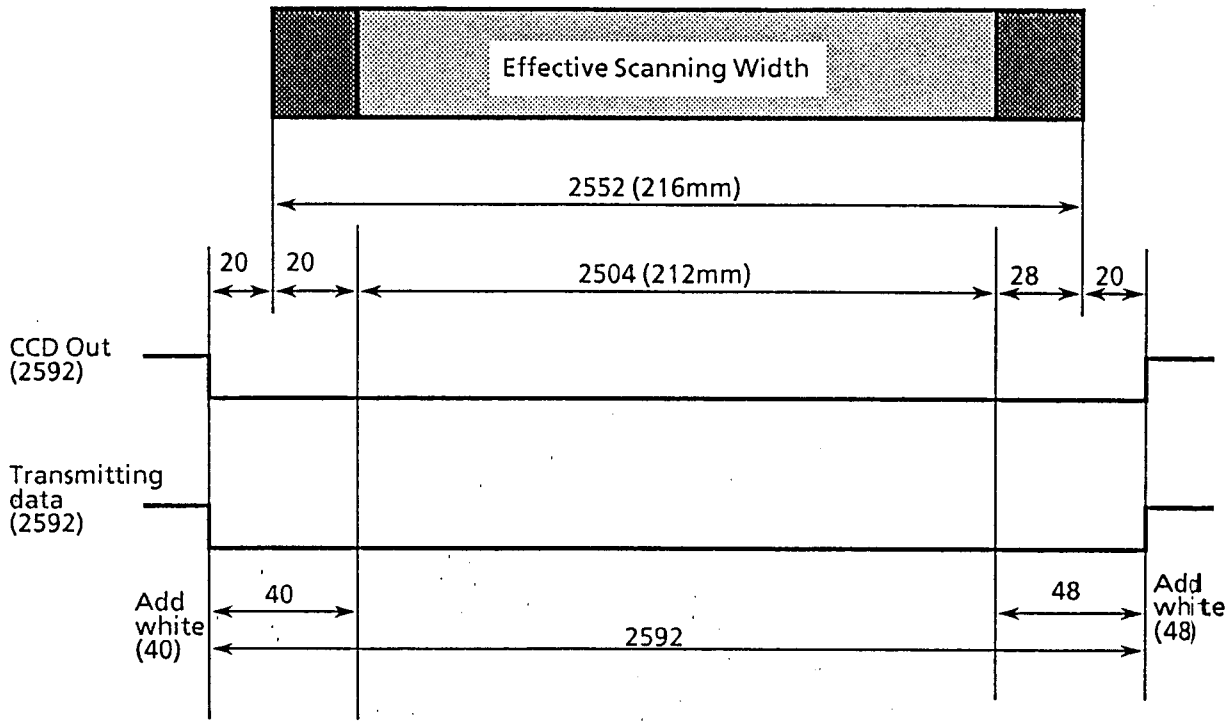
No.	Name	Type	Connection	Description
59	IORD	I	CPU	I/O Read
96	GWR	O		Gate Array Write
100	MDE	O		Modem Enable Clock
81	MRW	O		Modem Read Write
83	DINT	O	CPU	DMA Interrupt
82	PINT	O	CPU	Panel Interrupt
68	DEND	I	CPU	DMA End
67	FTON	I		F Tone
80	CTON	I		CI Tone
31	ROM	O		ROM Chip Select
30 29	PAM0 RAM1	O		RAM Chip Select
25 26 27 28	IO3 IO2 IO1 IO0	O		I/O Chip Select
3 5 6	RAS0 RAS1 RAS3	O		Row Address Strobe
7	CAS	O		Column Address Strobe
17 18 19 20 21 22 23 32 33 34 35 36 37 38 39	A17 A16 A12 A11 A10 A9 A8 A7 A6 A5 A4 A3 A2 A1 A0	O		Address Bus
12 10 8 85 87 89 93 95	D7 D6 D5 D4 D3 D2 D1 D0	I/O		Data Bus
99	CKO	I/O	Panel	Clock Signal Output
77	PLCK	I	CPU	Panel Clock
69	RXS	I	Panel	RX Signal
98	TXS	I	Panel	TX Signal

DZZNS58052 (CPI2) : IC13 [Pin Assignment] (3/3)

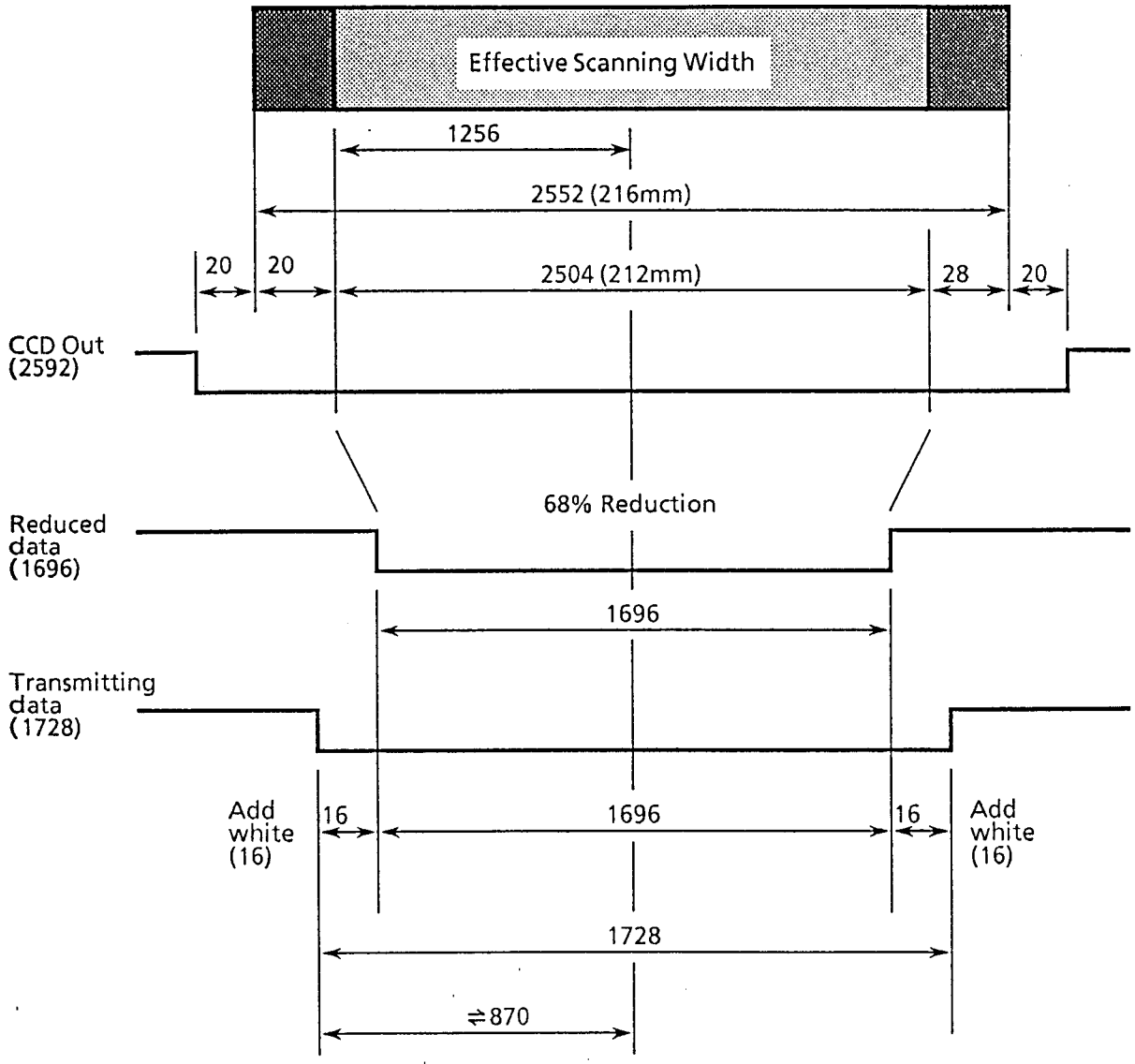
No.	Name	Type	Connection	Description
16 40 66 90	Vdd	I	+ 5V	+ 5V
15 41 65 91	Vss	I	GND	GND

6.16 Effective Scanning Width and Recording Width

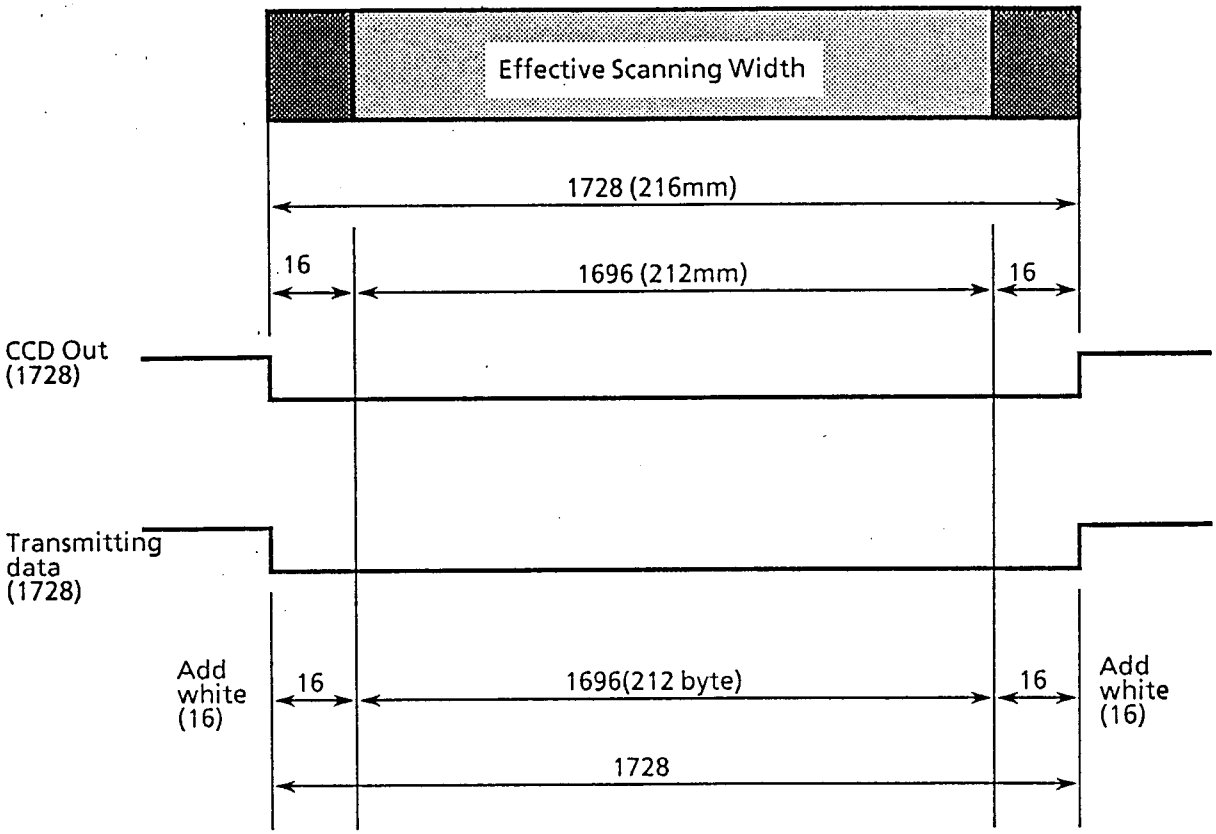
6.16.1 300dpi Scanning (UF-312)



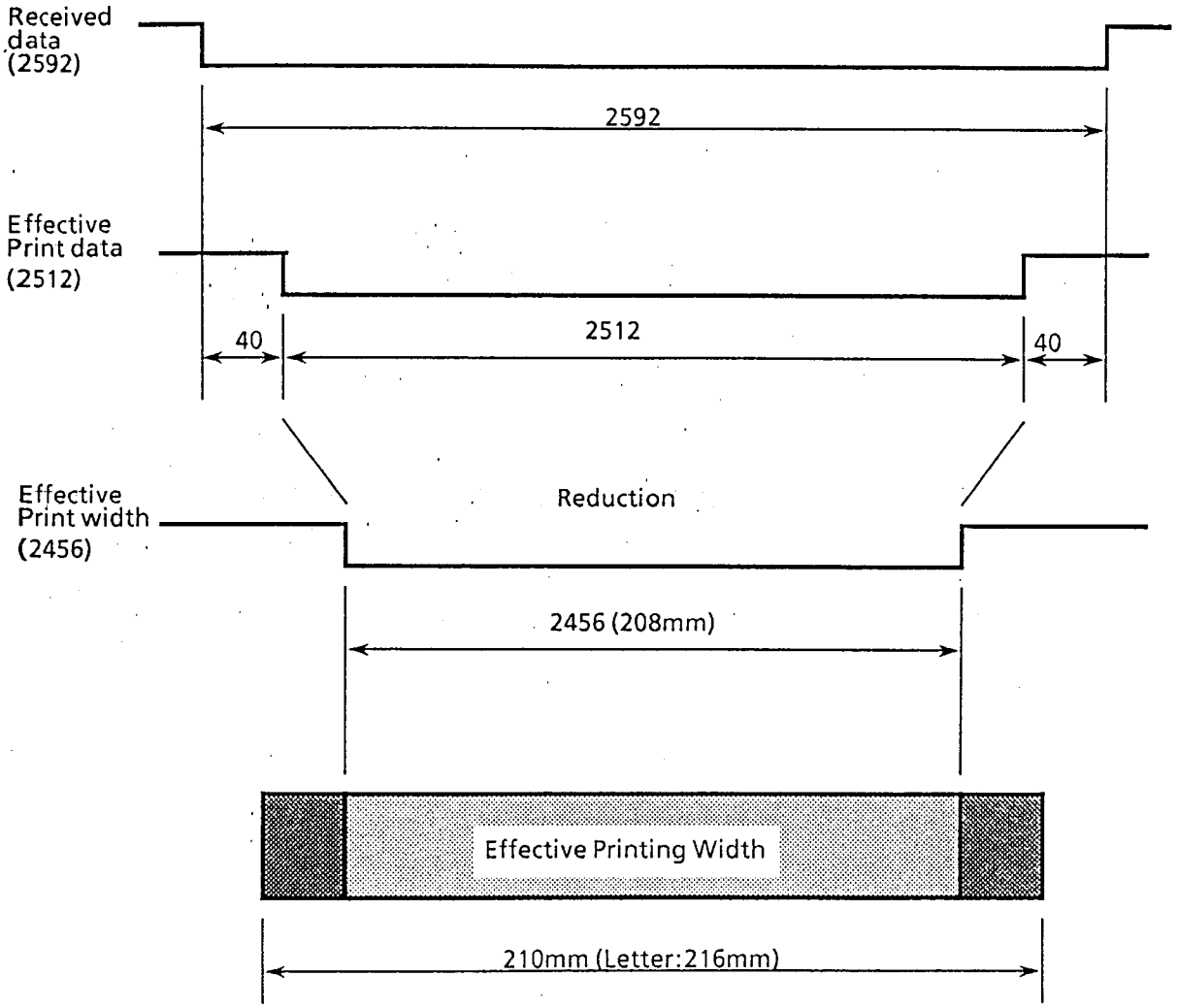
6.16.2 300dpi → 8pel/mm Scanning (UF-312)



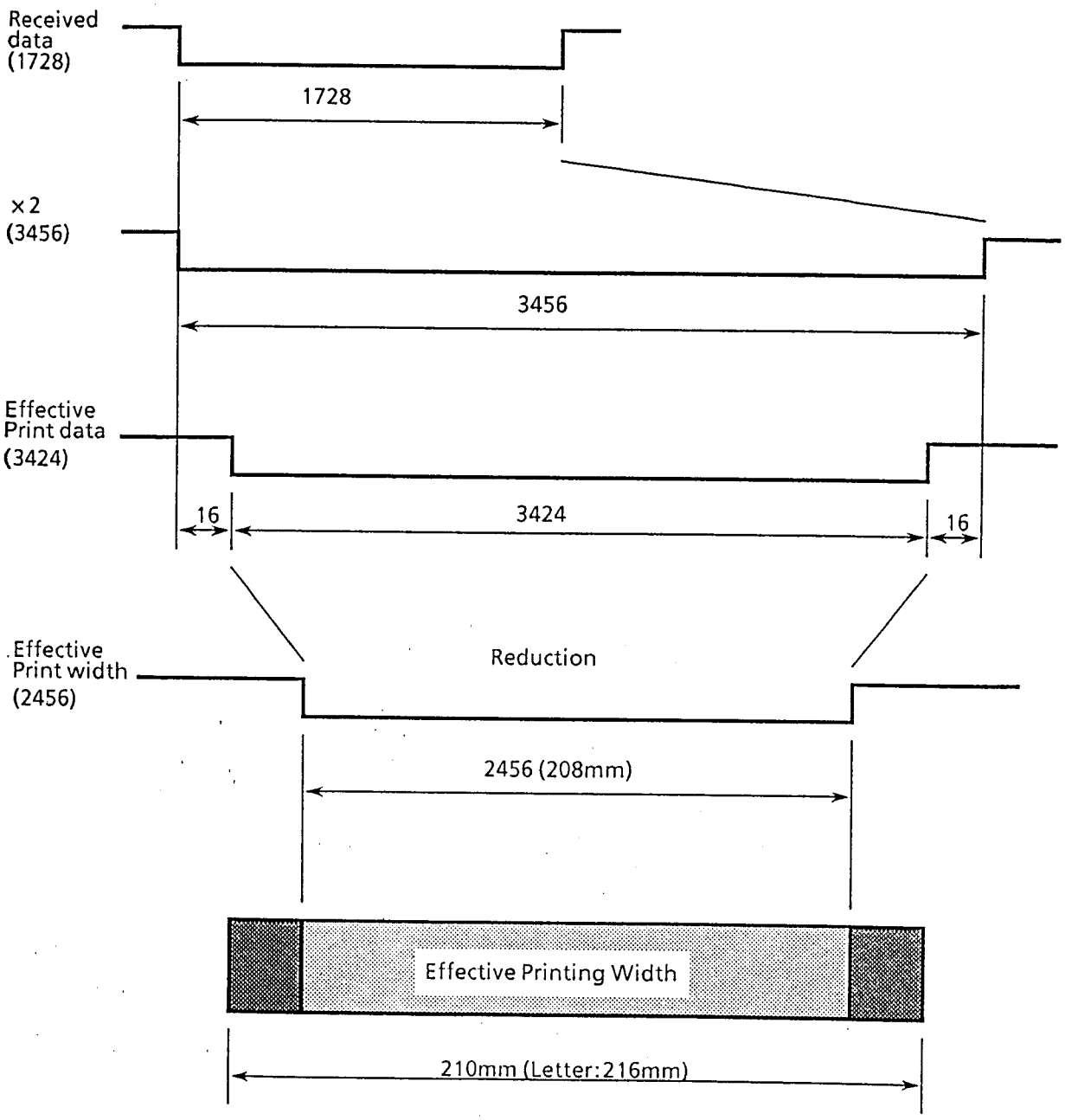
6.16.3 8pel/mm Scanning (UF-311)



6.16.4 300dpi → 300dpi Printing (UF-311/312)



6.16.5 8pel/mm → 300dpi Printing (UF-311/312)



Chapter 7
Schematic Diagram & Parts List

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NOTE: The contents of this chapter covers both the UF-311 and UF-312.

7.1 Internal Wiring Diagram (UF-311)

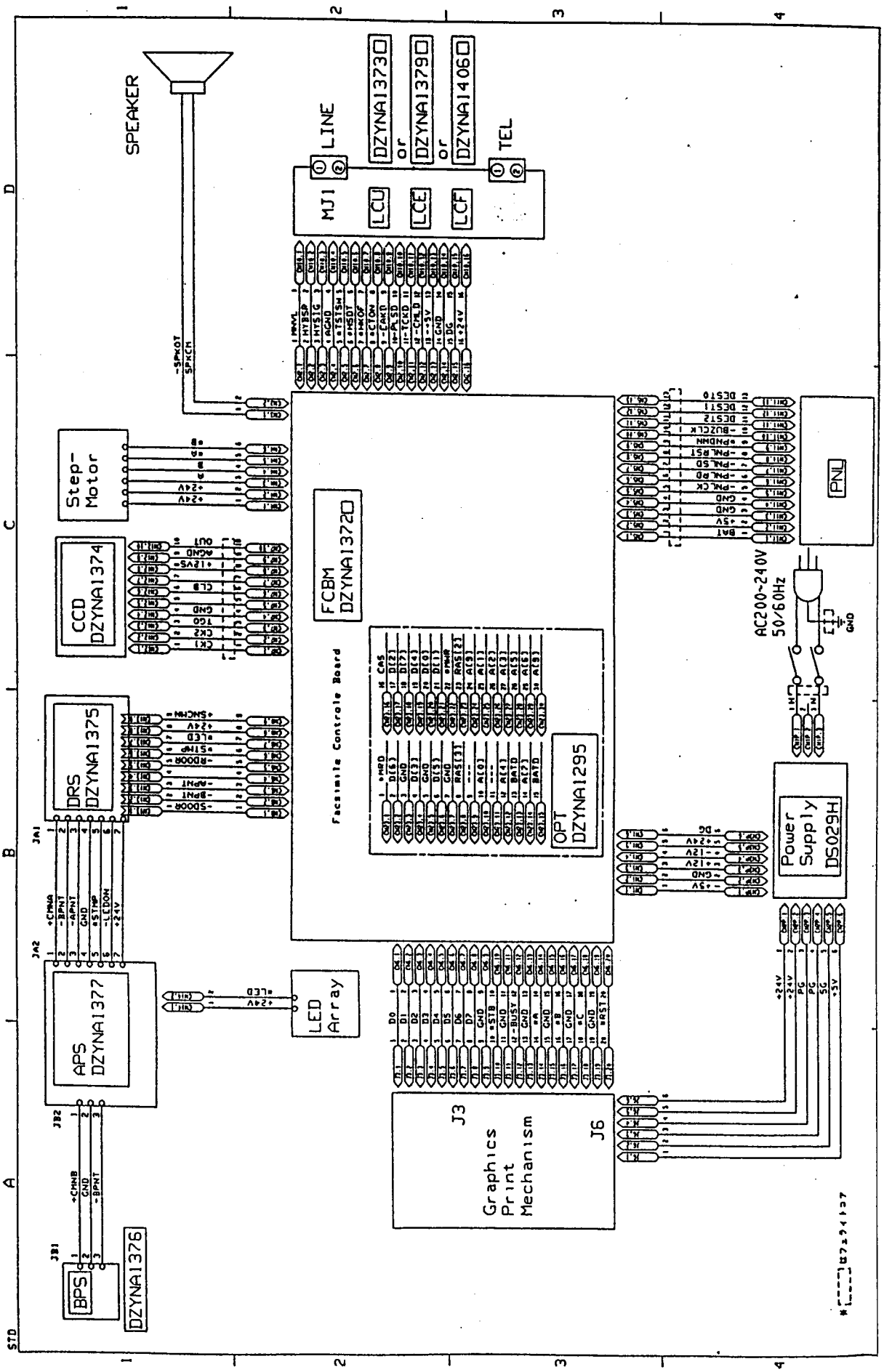


Fig. 1 Internal Wiring Diagram (UF-311)

7.2 Internal Wiring Diagram (UF-312)

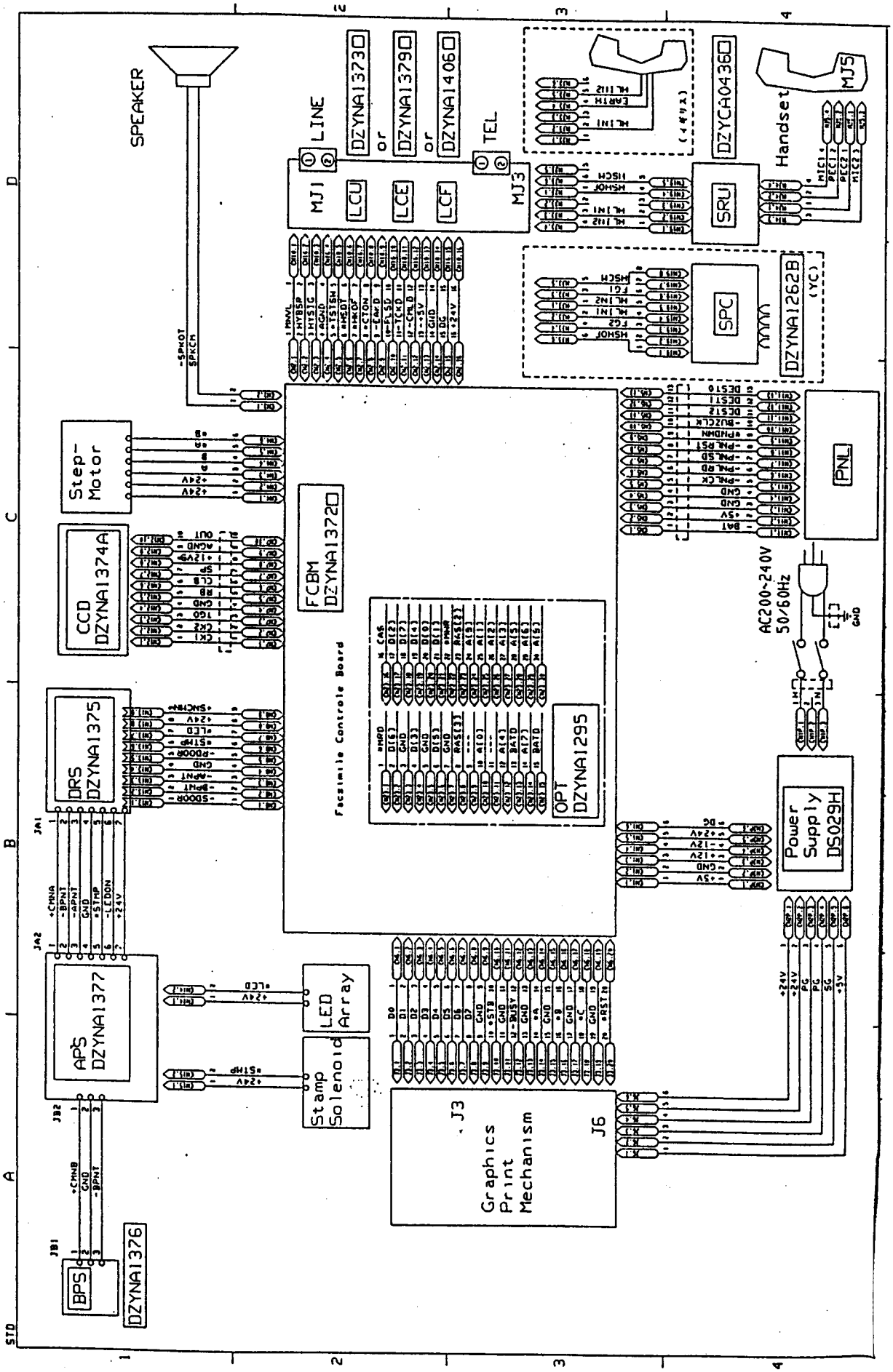


Fig. 2 Internal Wiring Diagram (UF-312)

7.3 Facsimile Control Board (FCBM)

Ref. No.	Part No.	Description	DZYNA			DZYNA		
			1372**	1372B**	1372D**	1372A**	1372C**	1372E**
IC1	AM27C020-15	Integrated Circuit	1	1	1	1	1	1
	DICF-32CS	IC Socket	1	1	1	1	1	1
IC2	M34083P	Integrated Circuit	1	1	1	1	1	1
IC3	TL081CPS-T1	Integrated Circuit	1	1	1	1	1	1
IC4	SM6104S1-ET	Integrated Circuit	1	1	1	1	1	1
IC5	MC74HC02	Integrated Circuit	1	1	1	1	1	1
IC6	PST575CMT-R	Integrated Circuit	1	1	1	1	1	1
IC7	LC3564PML-12	Integrated Circuit	0	0	0	1	1	1
IC8	LC3564PML-12	Integrated Circuit	1	1	1	1	1	1
IC9	TA78L12S	Integrated Circuit	1	1	1	1	1	1
IC10	BU2141KS	Integrated Circuit	1	1	1	1	1	1
IC11	HD63183FP	Integrated Circuit	1	1	1	1	1	1
IC12	UPD70208GF	Integrated Circuit	1	1	1	1	1	1
IC13	DZZNS58052	Integrated Circuit	1	1	1	1	1	1
IC14	DZZNS58053	Integrated Circuit	1	1	1	1	1	1
IC15	MC74HCU04	Integrated Circuit	1	1	1	1	1	1
IC16	M5248P-01	Integrated Circuit	1	1	1	1	1	1
IC17	LC324256ZL10	Integrated Circuit	1	1	1	0	0	0
IC18	LC324256ZL10	Integrated Circuit	1	1	1	0	0	0
IC19	D424800V-10L	Integrated Circuit	0	0	0	1	1	1
IC20	LC3564PML-12	Integrated Circuit	0	0	0	1	1	1
IC21	LC3564PML-12	Integrated Circuit	1	1	1	1	1	1
IC22	MN86051MZ1A4	Integrated Circuit	1	1	1	1	1	1
IC24	BU4053BF-T1	Integrated Circuit	1	1	1	1	1	1
IC25	LM386N-1	Integrated Circuit	1	1	1	1	1	1
IC26	BA4558F-T1	Integrated Circuit	1	1	1	1	1	1
IC27	BA4558F-T1	Integrated Circuit	1	1	1	1	1	1
IC28	BA4558F-T1	Integrated Circuit	1	1	1	1	1	1
IC29	NM93C46M8-93	Integrated Circuit	0	0	0	0	0	0
IC31	MC74HC32	Integrated Circuit	0	0	0	1	1	1
IC32	BA4558F-T1	Integrated Circuit	1	1	1	1	1	1
IC33	MN93C46M8-63	Integrated Circuit	1	1	1	1	1	1
Q1	2SD1622	Transistor	1	1	1	1	1	1
Q2	2SK1133	FET	1	1	1	1	1	1
Q4	2SC2812	Transistor	1	1	1	1	1	1
Q5	DTC144WK	Transistor	1	1	1	1	1	1
Q6	Not used							
Q7	DTC144WK	Transistor	1	1	1	1	1	1
Q8	DTC144WK	Transistor	1	1	1	1	1	1
Q9	DTC144WK	Transistor	0	0	0	1	1	1
Q10	2SB808FSPAAC	Transistor	0	0	0	1	1	1
Q11	2SB808FSPAAC	Transistor	0	0	0	1	1	1
Q13	DTC144WK	Transistor	1	1	1	1	1	1
Q15	2SC2412K	Transistor	1	1	1	1	1	1
Q16	2SC2412K	Transistor	1	1	1	1	1	1
Q17	DTC144WK	Transistor	1	1	1	1	1	1
Q20	DTC144EK	Transistor	0	0	0	1	1	1
Q21	DTA144WK	Transistor	1	1	1	1	1	1
Q22	2SD1626	Transistor	0	0	0	1	1	1
Q23	DTC144WK	Transistor	1	1	1	1	1	1
D1	1SR139-100	Diode	0	0	0	1	1	1
D2	DAN217T146	Diode	1	1	1	1	1	1
D3	DAN217T146	Diode	1	1	1	1	1	1
D4	DA116T146	Diode	1	1	1	1	1	1
D5	DA116T146	Diode	0	0	0	1	1	1
D6	SFPB52	Diode	0	0	0	1	1	1
D7	RD6.2ES-T1	Zener Diode	0	0	0	1	1	1
D8	HZS2ALL	Zener Diode	0	0	0	1	1	1
D9	HZ33P	Diode	1	1	1	1	1	1
D10	DAN217T146	Diode	1	1	1	1	1	1
D11	DAN217T146	Diode	1	1	1	1	1	1
D12	DA116T146	Diode	1	1	1	1	1	1
D13	RB421DT-146	Diode	1	1	1	1	1	1
D14	SFPB52	Diode	1	1	1	1	1	1
D15	DA116T146	Diode	0	0	0	1	1	1

Ref. No.	Part No.	Description	DZYNA			DZYNA		
			1372**	1372B**	1372D**	1372A**	1372C**	1372C**
D16	DAN217T146	Diode	1	1	1	1	1	1
PC1	EE-SA102	Photo Interrupter	1	1	1	1	1	1
F1	K19374-2A	Fuse	1	1	1	1	1	1
X1	CST4.19MGW	Oscilator	1	1	1	1	1	1
X2	CSA32.0MX040	Oscilator	1	1	1	1	1	1
X3	DZZDS21160	Oscilator	1	1	1	1	1	1
BAT1	4-31FT-F	Battery	0	0	0	1	1	1
BAT2	2-31FT-F	Battery	1	1	1	1	1	1
L2	BL02RN1R62T2	Coil	1	1	1	1	1	1
L4	BL02RN1R62T2	Coil	1	1	1	1	1	1
L5	BL02RN1R62T2	Coil	1	1	1	1	1	1
L6	BL02RN1R62T2	Coil	1	1	1	1	1	1
L7	BL02RN1R62T2	Coil	1	1	1	1	1	1
R1	ERJ6GQYJ102	Resistor, 1.0KΩ/0.125W	1	1	1	1	1	1
R2	ERJ6GQYJ102	Resistor, 1.0KΩ/0.125W	1	1	1	1	1	1
R3	ERJ6GQYJ102	Resistor, 1.0KΩ/0.125W	1	1	1	1	1	1
R4	ERJ6GQYJ102	Resistor, 1.0KΩ/0.125W	1	1	1	1	1	1
R5	ERJ6GQYJ221	Resistor, 220Ω/0.125W	1	1	1	1	1	1
R6	ERJ6GQYJ221	Resistor, 220Ω/0.125W	1	1	1	0	0	0
R7	ERJ6GQYJ221	Resistor, 220Ω/0.125W	1	1	1	1	1	1
R8	ERJ6GQYJ221	Resistor, 220Ω/0.125W	1	1	1	1	1	1
R9	ERJ6GQYJ221	Resistor, 220Ω/0.125W	1	1	1	1	1	1
R10	ERJ6GQYJ221	Resistor, 220Ω/0.125W	1	1	1	1	1	1
R11	ERJ6GQYJ562	Resistor, 5.6KΩ/0.125W	1	1	1	1	1	1
R12	ERJ6GQYJ562	Resistor, 5.6KΩ/0.125W	1	1	1	1	1	1
R13	ERJ6GQYJ103	Resistor, 10KΩ/0.125W	1	1	1	1	1	1
R14	ERJ6GQYJ101	Resistor, 100Ω/0.125W	1	1	1	1	1	1
R16	ERJ6GQYJ100	Resistor, 10Ω/0.125W	1	1	1	1	1	1
R17	ERJ6GQYJ821	Resistor, 820Ω/0.125W	1	1	1	1	1	1
R18	ERJ6GQYJ821	Resistor, 820Ω/0.125W	1	1	1	1	1	1
R19	ERJ6GQYJ102	Resistor, 1.0KΩ/0.125W	1	1	1	1	1	1
R20	ERJ6GQYJ103	Resistor, 10KΩ/0.125W	1	1	1	1	1	1
R21	ERJ6GQYJ471	Resistor, 470Ω/0.125W	1	1	1	1	1	1
R23	ERJ6GQYJ103	Resistor, 10KΩ/0.125W	1	1	1	1	1	1
R24	ERJ6GQYJ100	Resistor, 10Ω/0.125W	1	1	1	1	1	1
R25	ERJ6GQYJ103	Resistor, 10KΩ/0.125W	1	1	1	1	1	1
R26	ERJ6GQYJ102	Resistor, 1.0KΩ/0.125W	1	1	1	1	1	1
R27	ERJ6GQYJ102	Resistor, 1.0KΩ/0.125W	1	1	1	1	1	1
R28	ERJ6GQYJ244	Resistor, 240KΩ/0.125W	1	1	1	1	1	1
R30	ERJ6GQYJ102	Resistor, 1.0KΩ/0.125W	1	1	1	1	1	1
R31	ERJ6GQYJ104	Resistor, 100KΩ/0.125W	1	1	1	1	1	1
R32	ERJ6GQYJ102	Resistor, 1.0KΩ/0.125W	0	0	0	1	1	1
R33	ERJ6GQYJ103	Resistor, 10KΩ/0.125W	0	0	0	1	1	1
R35	ERJ6GQYJ102	Resistor, 1.0KΩ/0.125W	1	1	1	1	1	1
R36	ERJ6GQYJ222	Resistor, 2.2KΩ/0.125W	0	0	0	1	1	1
R37	ERJ6GQYJ223	Resistor, 22KΩ/0.125W	0	0	0	1	1	1
R38	ERJ6GQY0R00	Resistor, 0Ω/0.125W	1	1	1	0	0	0
R39	ERJ6GQYJ103	Resistor, 10KΩ/0.125W	1	1	1	1	1	1
R40	ERJ6GQYJ3R3	Resistor, 3.3Ω/0.125W	1	1	1	1	1	1
R43	ERJ6GQYJ100	Resistor, 10Ω/0.125W	1	1	1	1	1	1
R45	ERJ6GQYJ221	Resistor, 220Ω/0.125W	1	1	1	1	1	1
R46	ERJ6GQYJ221	Resistor, 220Ω/0.125W	1	1	1	1	1	1
R47	ERJ6GQYJ221	Resistor, 220Ω/0.125W	1	1	1	1	1	1
R48	ERJ6GQYJ221	Resistor, 220Ω/0.125W	1	1	1	1	1	1
R49	ERJ6GQYJ221	Resistor, 220Ω/0.125W	1	1	1	1	1	1
R50	ERJ6GQYJ221	Resistor, 220Ω/0.125W	1	1	1	1	1	1
R51	ERJ6GQYJ221	Resistor, 220Ω/0.125W	1	1	1	1	1	1
R52	ERJ6GQYJ221	Resistor, 220Ω/0.125W	1	1	1	1	1	1
R53	ERJ6GQYJ221	Resistor, 220Ω/0.125W	1	1	1	1	1	1
R54	ERJ6GQYJ221	Resistor, 220Ω/0.125W	1	1	1	1	1	1
R55	ERJ6GQYJ221	Resistor, 220Ω/0.125W	1	1	1	1	1	1
R56	ERJ6GQYJ221	Resistor, 220Ω/0.125W	1	1	1	1	1	1
R57	ERJ6GQYJ221	Resistor, 220Ω/0.125W	1	1	1	1	1	1
R58	ERJ6GQYJ221	Resistor, 220Ω/0.125W	1	1	1	1	1	1

Ref. No.	Part No.	Description	DZYNA			DZYNA		
			1372**	1372B**	1372D**	1372A**	1372C**	1372E**
R59	ERJ6GQYJ221	Resistor, 220Ω/0.125W	1	1	1	1	1	1
R60	ERJ6GQYJ100	Resistor, 10Ω/0.125W	1	1	1	1	1	1
R61	ERJ6GQYJ221	Resistor, 220Ω/0.125W	1	1	1	1	1	1
R62	ERJ6GQYJ221	Resistor, 220Ω/0.125W	1	1	1	1	1	1
R65	ERJ6GQYJ103	Resistor, 10KΩ/0.125W	1	1	1	1	1	1
R69	ERJ6GQYJ330	Resistor, 33Ω/0.125W	1	1	1	1	1	1
R73	ERJ6GQYJ474	Resistor, 470KΩ/0.125W	1	1	1	1	1	1
R75	ERJ6GQYJ103	Resistor, 10KΩ/0.125W	1	1	1	1	1	1
R79	ERJ6GQYJ103	Resistor, 10KΩ/0.125W	1	1	1	1	1	1
R80	ERJ6GQYJ303	Resistor, 30KΩ/0.125W	1	1	0	1	1	0
	ERJ6GQYJ621	Resistor, 620Ω/0.125W	0	0	1	0	0	1
R81	ERJ6GQYJ100	Resistor, 10Ω/0.125W	1	1	1	1	1	1
R82	ERJ6GQYJ100	Resistor, 10Ω/0.125W	1	1	1	1	1	1
R83	ERJ6GQYJ102	Resistor, 1.0KΩ/0.125W	1	1	1	1	1	1
R84	ERJ6GQYJ102	Resistor, 1.0KΩ/0.125W	1	1	1	1	1	1
R85	ERJ6GQYJ103	Resistor, 10KΩ/0.125W	1	1	1	1	1	1
R86	ERJ6GQYJ102	Resistor, 1.0KΩ/0.125W	1	1	1	1	1	1
R87	ERJ6GQYJ102	Resistor, 1.0KΩ/0.125W	1	1	1	1	1	1
R151	ERJ6GQYJ333	Resistor, 33KΩ/0.125W	1	1	1	1	1	1
R152	ERJ6GQYJ333	Resistor, 33KΩ/0.125W	1	1	1	1	1	1
R153	ERJ6GQYJ333	Resistor, 33KΩ/0.125W	1	1	1	1	1	1
R154	ERJ6GQYJ471	Resistor, 470Ω/0.125W	1	1	1	1	1	1
R155	ERJ6GQYJ102	Resistor, 1.0KΩ/0.125W	1	1	1	1	1	1
R156	ERJ6GQYJ332	Resistor, 3.3KΩ/0.125W	1	1	1	1	1	1
R157	ERJ6GQYJ102	Resistor, 1.0KΩ/0.125W	1	1	1	1	1	1
R158	ERJ6GQYJ101	Resistor, 100Ω/0.125W	1	1	1	1	1	1
R159	ERJ6GQYJ103	Resistor, 10KΩ/0.125W	1	1	1	1	1	1
R160	ERJ6GQYJ103	Resistor, 10KΩ/0.125W	1	1	1	1	1	1
R161	ERJ6GQYJ103	Resistor, 10KΩ/0.125W	1	1	1	1	1	1
R162	ERJ6GQYJ103	Resistor, 10KΩ/0.125W	1	1	1	1	1	1
R163	ERJ6GQYJ102	Resistor, 1.0KΩ/0.125W	1	1	1	1	1	1
R166	ERJ6GQYJ102	Resistor, 1.0KΩ/0.125W	1	1	1	1	1	1
R167	ERJ6GQYJ102	Resistor, 1.0KΩ/0.125W	1	1	1	1	1	1
R168	ERJ6GQYJ102	Resistor, 1.0KΩ/0.125W	1	1	1	1	1	1
R169	ERJ6GQYJ471	Resistor, 470Ω/0.125W	1	1	1	1	1	1
R170	ERJ6GQYJ103	Resistor, 10KΩ/0.125W	1	1	1	1	1	1
R171	ERJ6GQYJ103	Resistor, 10KΩ/0.125W	1	1	1	1	1	1
R172	ERJ6GQYJ102	Resistor, 1.0KΩ/0.125W	1	1	1	1	1	1
R173	ERJ6GQYJ103	Resistor, 10KΩ/0.125W	1	1	1	1	1	1
R177	ERJ6GQYJ102	Resistor, 1.0KΩ/0.125W	1	1	1	1	1	1
R178	ERJ6GQYJ102	Resistor, 1.0KΩ/0.125W	1	1	1	1	1	1
R179	ERJ6GQYJ103	Resistor, 10KΩ/0.125W	1	0	1	1	0	1
	ERJ6GQYJ303	Resistor, 30KΩ/0.125W	0	1	0	0	1	0
R180	ERJ6GQYJ103	Resistor, 10KΩ/0.125W	1	1	1	1	1	1
R181	ERJ6GQYJ303	Resistor, 30KΩ/0.125W	1	1	0	1	1	0
	ERJ6GQYJ621	Resistor, 620Ω/0.125W	0	0	1	0	0	1
R182	ERJ6GQYJ102	Resistor, 1.0KΩ/0.125W	1	1	1	1	1	1
R183	ERJ6GQYJ102	Resistor, 1.0KΩ/0.125W	1	1	1	1	1	1
R184	ERJ6GQYJ334	Resistor, 330KΩ/0.125W	1	1	1	1	1	1
R185	ERJ6GQYJ222	Resistor, 2.2KΩ/0.125W	1	1	1	1	1	1
R186	ERJ6GQYJ223	Resistor, 22KΩ/0.125W	1	1	1	1	1	1
R187	ERJ6GQYJ473	Resistor, 47KΩ/0.125W	1	1	1	1	1	1
R189	ERJ6GQYJ101	Resistor, 100Ω/0.125W	1	1	1	1	1	1
R190	ERJ6GQYJ474	Resistor, 470KΩ/0.125W	1	1	1	1	1	1
R192	ERJ6GQYJ103	Resistor, 10KΩ/0.125W	1	1	1	1	1	1
R193	ERJ6GQYJ153	Resistor, 15KΩ/0.125W	1	1	1	1	1	1
R194	ERJ6GQYJ103	Resistor, 10KΩ/0.125W	1	1	1	1	1	1
R201	ERJ6GQYJ101	Resistor, 100Ω/0.125W	1	1	1	1	1	1
R202	ERJ6GQYJ472	Resistor, 4.7KΩ/0.125W	1	1	1	1	1	1
R203	ERJ6GQYJ473	Resistor, 47KΩ/0.125W	1	1	1	1	1	1
R206	ERJ6GQYJ103	Resistor, 10KΩ/0.125W	1	1	1	1	1	1
R207	ERJ6GQYJ221	Resistor, 220Ω/0.125W	1	1	1	1	1	1
R208	ERJ6GQYJ102	Resistor, 1KΩ/0.125W	1	1	1	1	1	1
R209	ERJ6GQYJ102	Resistor, 1KΩ/0.125W	1	1	1	1	1	1
R210	ERJ6GQYJ102	Resistor, 1KΩ/0.125W	1	1	1	1	1	1
R211	ERJ6GQYJ102	Resistor, 1KΩ/0.125W	1	1	1	1	1	1
R212	ERJ6GQYJ100	Resistor, 10Ω/0.125W	1	1	1	1	1	1
R213	ERJ6GQYJ100	Resistor, 10Ω/0.125W	1	1	1	1	1	1

Ref. No.	Part No.	Description	DZYNA			DZYNA		
			1372**	1372*B*	1372D**	1372A**	1372C**	1372E**
R214	ERJ6GQYJ221	Resistor, 220Ω/0.125W	1	1	1	1	1	1
R215	ERJ6GQYJ221	Resistor, 220Ω/0.125W	1	1	1	1	1	1
R216	ERJ6GQYJ101	Resistor, 100Ω/0.125W	1	1	1	1	1	1
R217	ERJ6GQYJ101	Resistor, 100Ω/0.125W	1	1	1	1	1	1
R219	ERJ6GQYJ101	Resistor, 100Ω/0.125W	1	1	1	1	1	1
R220	ERJ6GQYJ105	Resistor, 1.0MΩ/0.125W	1	1	1	1	1	1
R221	ERJ6GQYJ101	Resistor, 100Ω/0.125W	1	1	1	1	1	1
R223	ERJ6GQYJ104	Resistor, 100KΩ/0.125W	1	1	1	1	1	1
R224	ERJ6GQYJ103	Resistor, 10KΩ/0.125W	1	1	1	1	1	1
R226	ERJ6GQYJ103	Resistor, 10KΩ/0.125W	1	1	1	1	1	1
R227	ERJ6GQYJ103	Resistor, 10KΩ/0.125W	1	1	1	1	1	1
R228	ERJ6GQYJ103	Resistor, 10KΩ/0.125W	1	1	1	1	1	1
R229	ERJ6GQYJ103	Resistor, 10KΩ/0.125W	1	1	1	1	1	1
R230	ERJ6GQYJ103	Resistor, 10KΩ/0.125W	1	1	1	1	1	1
R231	ERJ6GQYJ103	Resistor, 10KΩ/0.125W	1	1	1	1	1	1
R232	ERJ6GQYJ103	Resistor, 10KΩ/0.125W	1	1	1	1	1	1
R236	ERJ6GQYJ221	Resistor, 220Ω/0.125W	1	1	1	1	1	1
R237	ERJ6GQYJ105	Resistor, 1.0MΩ/0.125W	1	1	1	1	1	1
R238	ERJ6GQYJ103	Resistor, 10KΩ/0.125W	1	1	1	1	1	1
R239	ERJ6GQYJ102	Resistor, 1.0KΩ/0.125W	1	1	1	1	1	1
R240	ERJ6GQYJ102	Resistor, 1.0KΩ/0.125W	1	1	1	1	1	1
R241	ERJ6GQYJ103	Resistor, 10KΩ/0.125W	1	1	1	1	1	1
R242	ERJ6GQYJ103	Resistor, 10KΩ/0.125W	1	1	1	1	1	1
R243	ERJ6GQYJ102	Resistor, 1.0KΩ/0.125W	1	1	1	1	1	1
R244	ERJ6GQYJ102	Resistor, 1.0KΩ/0.125W	1	1	1	1	1	1
R249	ERJ6GQYJ100	Resistor, 10Ω/0.125W	1	1	1	1	1	1
R250	ERJ6GQYJ102	Resistor, 1.0KΩ/0.125W	1	1	1	1	1	1
R251	ERJ6GQYJ103	Resistor, 10KΩ/0.125W	1	1	1	1	1	1
R252	ERJ6GQYJ103	Resistor, 10KΩ/0.125W	1	1	1	1	1	1
R253	ERJ6GQYJ103	Resistor, 10KΩ/0.125W	1	1	1	1	1	1
R254	ERJ6GQYJ103	Resistor, 10KΩ/0.125W	1	1	1	1	1	1
R255	ERJ6GQYJ103	Resistor, 10KΩ/0.125W	1	1	1	1	1	1
R256	ERJ6GQYJ103	Resistor, 10KΩ/0.125W	1	1	1	1	1	1
R257	ERJ6GQYJ103	Resistor, 10KΩ/0.125W	1	1	1	1	1	1
R258	ERJ6GQYJ103	Resistor, 10KΩ/0.125W	1	1	1	1	1	1
R259	ERJ6GQYJ103	Resistor, 10KΩ/0.125W	1	1	1	1	1	1
R260	ERJ6GQYJ103	Resistor, 10KΩ/0.125W	1	1	1	1	1	1
R261	ERJ6GQYJ103	Resistor, 10KΩ/0.125W	1	1	1	1	1	1
R262	ERJ6GQYJ103	Resistor, 10KΩ/0.125W	1	1	1	1	1	1
R263	ERJ6GQYJ103	Resistor, 10KΩ/0.125W	1	1	1	1	1	1
R264	ERJ6GQYJ103	Resistor, 10KΩ/0.125W	1	1	1	1	1	1
R265	ERJ6GQYJ103	Resistor, 10KΩ/0.125W	1	1	1	1	1	1
R266	ERJ6GQYJ103	Resistor, 10KΩ/0.125W	1	1	1	1	1	1
R267	ERJ6GQYJ103	Resistor, 10KΩ/0.125W	1	1	1	1	1	1
R268	ERJ6GQYJ103	Resistor, 10KΩ/0.125W	1	1	1	1	1	1
R269	ERJ6GQYJ103	Resistor, 10KΩ/0.125W	1	1	1	1	1	1
R270	ERJ6GQYJ103	Resistor, 10KΩ/0.125W	1	1	1	1	1	1
R271	ERJ6GQYJ103	Resistor, 10KΩ/0.125W	1	1	1	1	1	1
R272	ERJ6GQYJ472	Resistor, 4.7KΩ/0.125W	1	1	1	1	1	1
R273	ERJ6GQYJ103	Resistor, 10KΩ/0.125W	1	1	1	1	1	1
R274	ERJ6GQYJ103	Resistor, 10KΩ/0.125W	1	1	1	1	1	1
R275	ERJ6GQYJ101	Resistor, 100Ω/0.125W	1	1	1	1	1	1
R277	ERJ6GQYJ562	Resistor, 5.6KΩ/0.125W	0	0	0	1	1	1
R278	ERJ6GQYJ104	Resistor, 100KΩ/0.125W	0	0	0	1	1	1
R279	ERJ6GQYJ103	Resistor, 10KΩ/0.125W	0	0	0	1	1	1
R280	ERJ6GQYJ332	Resistor, 3.3KΩ/0.125W	0	0	0	1	1	1
R281	ERJ6GQYJ103	Resistor, 10KΩ/0.125W	0	0	0	1	1	1
R282	ERJ6GQYJ182	Resistor, 1.8KΩ/0.125W	0	0	0	1	1	1
R283	ERJ6GQYJ822	Resistor, 8.2KΩ/0.125W	0	0	0	1	1	1
R284	ERJ6GQYJ103	Resistor, 10KΩ/0.125W	1	1	1	1	1	1
R285	ERJ6GQYJ101	Resistor, 100Ω/0.125W	1	1	1	1	1	1
R286	ERJ6GQYJ103	Resistor, 10KΩ/0.125W	1	1	1	1	1	1
R287	ERJ6GQYJ103	Resistor, 10KΩ/0.125W	1	1	1	1	1	1
R288	ERJ6GQYJ102	Resistor, 1.0KΩ/0.125W	1	1	1	1	1	1
R289	ERJ6GQYJ103	Resistor, 10KΩ/0.125W	1	1	1	1	1	1
R293	ERJ12YJ221	Resistor, 220Ω/0.5W	1	1	1	1	1	1

Ref. No.	Part No.	Description	DZYNA			DZYNA		
			1372**	1372B**	1372D**	1372A**	1372C**	1372E**
R294	ERJ6GQYJ100	Resistor, 10Ω/0.125W	1	1	1	1	1	1
R295	ERJ6GQYJ103	Resistor, 10KΩ/0.125W	1	1	1	1	1	1
R296	ERJ6GQYJ103	Resistor, 10KΩ/0.125W	1	1	1	1	1	1
R297	ERJ6GQYJ103	Resistor, 10KΩ/0.125W	1	1	1	1	1	1
R298	ERJ6GQYJ103	Resistor, 10KΩ/0.125W	1	1	1	1	1	1
R299	ERJ6GQYJ103	Resistor, 10KΩ/0.125W	1	1	1	1	1	1
R300	ERJ6GQYJ103	Resistor, 10KΩ/0.125W	1	1	1	1	1	1
R301	ERJ6GQYJ101	Resistor, 100Ω/0.125W	1	1	1	1	1	1
R302	ERJ6GQYJ222	Resistor, 22KΩ/0.125W	1	1	1	1	1	1
R303	ERJ6GQYJ102	Resistor, 1.0KΩ/0 W	1	1	1	1	1	1
R304	ERJ6GQYJ104	Resistor, 100KΩ/ W	1	1	1	1	1	1
R305	ERJ6GQYJ473	Resistor, 47KΩ/0.125W	0	0	0	1	1	1
R306	ERJ6GQYJ272	Resistor, 2.7KΩ/0.125W	1	1	1	1	1	1
R307	ERJ6GQYJ472	Resistor, 4.7KΩ/0.125W	0	0	0	1	1	1
R308	ERJ6GQYJ104	Resistor, 100KΩ/0.125W	0	0	0	1	1	1
R502	ERJ6GQYJ221	Resistor, 220Ω/0.125W	1	1	1	1	1	1
R505	ERJ6GQYJ221	Resistor, 220Ω/0.125W	1	1	1	1	1	1
R506	ERJ6GQYJ100	Resistor, 10Ω/0.125W	1	1	1	1	1	1
R511	ERJ6GQYJ102	Resistor, 1KΩ/0.125W	1	1	1	1	1	1
R512	ERJ6GQYJ102	Resistor, 1KΩ/0.125W	1	1	1	1	1	1
R513	ERJ6GQYJ221	Resistor, 220Ω/0.125W	1	1	1	1	1	1
R514	ERJ6GQYJ0R00	Resistor, 0Ω/0.125W	1	1	1	1	1	1
R515	ERJ6GQYJ330	Resistor, 33Ω/0.125W	1	1	1	1	1	1
R516	ERJ6GQYJ103	Resistor, 10KΩ/0.125W	1	1	1	1	1	1
R517	ERJ6GQYJ221	Resistor, 220Ω/0.125W	1	1	1	1	1	1
R518	ERJ6GQYJ221	Resistor, 220Ω/0.125W	1	1	1	1	1	1
R519	ERJ6GQYJ221	Resistor, 220Ω/0.125W	1	1	1	1	1	1
R520	ERJ6GQYJ330	Resistor, 33Ω/0.125W	1	1	1	1	1	1
R521	ERJ6GQYJ330	Resistor, 33Ω/0.125W	1	1	1	1	1	1
R522	ERJ6GQYJ330	Resistor, 33Ω/0.125W	1	1	1	1	1	1
R523	ERJ6GQYJ330	Resistor, 33Ω/0.125W	1	1	1	1	1	1
R525	ERJ6GQYJ100	Resistor, 220Ω/0.125W	1	1	1	1	1	1
R526	ERJ6GQYJ181	Resistor, 180Ω/0.125W	1	1	1	1	1	1
R527	ERJ6GQYJ181	Resistor, 180Ω/0.125W	1	1	1	1	1	1
R528	ERJ6GQYJ221	Resistor, 220Ω/0.125W	0	0	0	1	1	1
R529	ERJ6GQYJ103	Resistor, 10KΩ/0.125W	1	1	1	1	1	1
R530	ERJ6GQYJ100	Resistor, 220Ω/0.125W	1	1	1	1	1	1
R531	ERJ6GQYJ0R00	Resistor, 0Ω/0.125W	1	1	1	1	1	1
R532	ERJ6GQYJ0R00	Resistor, 0Ω/0.125W	1	1	1	1	1	1
R533	ERJ6GQYJ221	Resistor, 220Ω/0.125W	0	0	0	1	1	1
R534	ERJ6GQYJ471	Resistor, 470Ω/0.125W	1	1	1	1	1	1
R535	ERJ6GQYJ152	Resistor, 1.5KΩ/0.125W	1	1	1	1	1	1
R604	ERJ6GQYJ103	Resistor, 10KΩ/0.125W	1	1	1	1	1	1
R641	ERJ6GQYJ3T3	Resistor, 3.3Ω/0.125W	1	1	1	1	1	1
R664	ERJ6GQYJ102	Resistor, 1KΩ/0.125W	1	1	1	1	1	1
R665	ERJ6GQYJ102	Resistor, 1KΩ/0.125W	1	1	1	1	1	1
R666	ERJ6GQYJ102	Resistor, 1KΩ/0.125W	1	1	1	1	1	1
R667	ERJ6GQY0R00	Resistor, 0Ω/0.125W	1	1	1	1	1	1
R668	ERJ6GQYJ393	Resistor, 39KΩ/0.125W	1	1	1	1	1	1
R669	ERJ6GQYJ393	Resistor, 39KΩ/0.125W	1	1	1	1	1	1
R670	ERJ6GQYJ153	Resistor, 15KΩ/0.125W	1	1	1	1	1	1
R671	ERJ6GQYJ153	Resistor, 15KΩ/0.125W	1	1	1	1	1	1
R680	ERJ6GQYJ473	Resistor, 47KΩ/0.125W	1	1	1	1	1	1
R681	ERJ6GQYJ103	Resistor, 10KΩ/0.125W	1	1	1	1	1	1
R683	ERJ6GQYJ473	Resistor, 47KΩ/0.125W	1	1	1	1	1	1
R687	ERJ6GQYJ473	Resistor, 47KΩ/0.125W	1	0	0	1	0	0
	ERJ6GQYJ563	Resistor, 56KΩ/0.125W	0	1	1	0	1	1
R775	ERJ6GQYJ102	Resistor, 1KΩ/0.125W	1	1	1	1	1	1
R782	ERJ6GQYJ913	Resistor, 91KΩ/0.125W	1	1	1	1	1	1
R783	ERJ6GQYJ621	Resistor, 620Ω/0.125W	1	1	1	1	1	1
R785	ERJ6GQYJ222	Resistor, 2.2KΩ/0.125W	1	1	1	1	1	1
R792	ERJ6GQYJ513	Resistor, 51KΩ/0.125W	1	1	1	1	1	1
R793	ERJ6GQYJ333	Resistor, 33KΩ/0.125W	1	1	1	1	1	1
R794	ERJ6GQYJ513	Resistor, 51KΩ/0.125W	1	1	1	1	1	1
R796	ERJ6GQYJ103	Resistor, 10KΩ/0.125W	1	1	1	1	1	1
R797	ERJ6GQYJ103	Resistor, 10KΩ/0.125W	1	1	1	1	1	1

Ref. No.	Part No.	Description	DZYNA			DZYNA		
			1372**	1372B**	1372D**	1372A**	1372C**	1372E**
R798	ERJ6GQYJ103	Resistor, 10KΩ/0.125W	1	1	1	1	1	1
R799	ERJ6GQYJ682	Resistor, 6.8KΩ/0.125W	1	1	1	1	1	1
R800	ERJ6GQYJ433	Resistor, 43KΩ/0.125W	1	1	1	1	1	1
R802	ERJ6GQYJ153	Resistor, 15KΩ/0.125W	1	1	1	1	1	1
R803	ERJ6GQYJ514	Resistor, 510KΩ/0.125W	1	1	1	1	1	1
R805	ERJ6GQYJ102	Resistor, 1KΩ/0.125W	1	1	1	1	1	1
R806	ERJ6GQYJ102	Resistor, 1KΩ/0.125W	1	1	1	1	1	1
R807	ERJ6GQYJ102	Resistor, 1KΩ/0.125W	1	1	1	1	1	1
R808	ERJ6GQYJ102	Resistor, 1KΩ/0.125W	1	1	1	1	1	1
R809	ERJ6GQYJ102	Resistor, 1KΩ/0.125W	1	1	1	1	1	1
R810	ERJ6GQYJ102	Resistor, 1KΩ/0.125W	1	1	1	1	1	1
R811	ERJ6GQYJ102	Resistor, 1KΩ/0.125W	1	1	1	1	1	1
R824	ERJ6GQYJ105	Resistor, 1.0MΩ/0.125W	1	1	1	1	1	1
R825	ERJ6GQYJ471	Resistor, 470Ω/0.125W	1	1	1	1	1	1
R826	ERJ6GQYJ471	Resistor, 470Ω/0.125W	1	1	1	1	1	1
R840	ERJ6GQYJ102	Resistor, 1KΩ/0.125W	1	1	1	1	1	1
C2	ECEA1CKA220	Capacitor, 22μF/16V	1	1	1	1	1	1
C3	ECEA1CKA220	Capacitor, 22μF/16V	1	1	1	1	1	1
C4	GRM4F104Z1EY	Capacitor, 0.1μF/25V	1	1	1	1	1	1
C5	ECEA1CKA220	Capacitor, 22μF/16V	1	1	1	1	1	1
C6	GRM4F104Z1EY	Capacitor, 0.1μF/25V	1	1	1	1	1	1
C7	ECEA1CKA220	Capacitor, 22μF/16V	1	1	1	1	1	1
C8	ECEA1CKA220	Capacitor, 22μF/16V	1	1	1	1	1	1
C9	ECEA1CKA470	Capacitor, 47μF/16V	0	0	0	1	1	1
C10	ECEA1CKA220	Capacitor, 22μF/16V	1	1	1	1	1	1
C11	ECEA1CKA220	Capacitor, 22μF/16V	1	1	1	1	1	1
C12	ECEA1CKA220	Capacitor, 22μF/16V	1	1	1	1	1	1
C13	ECEA1CKA220	Capacitor, 22μF/16V	1	1	1	1	1	1
C14	GRM4F104Z1EY	Capacitor, 0.1μF/25V	1	1	1	1	1	1
C15	GRM4F104Z1EY	Capacitor, 0.1μF/25V	0	0	0	1	1	1
C16	GRM4F104Z1EY	Capacitor, 0.1μF/25V	1	1	1	1	1	1
C17	GRM4F104Z1EY	Capacitor, 0.1μF/25V	1	1	1	1	1	1
C18	ECEA1CKA220	Capacitor, 22μF/16V	1	1	1	1	1	1
C19	ECEA1CKA220	Capacitor, 22μF/16V	1	1	1	1	1	1
C20	ECEA1CKA220	Capacitor, 22μF/16V	1	1	1	1	1	1
C21	ECEA1CKA220	Capacitor, 22μF/16V	1	1	1	1	1	1
C22	ECEA1CKA220	Capacitor, 22μF/16V	1	1	1	1	1	1
C23	GRM4F104Z1EY	Capacitor, 0.1μF/25V	1	1	1	1	1	1
C24	ECEA1VKA220	Capacitor, 22μF/35V	1	1	1	1	1	1
C25	GRM4F104Z1EY	Capacitor, 0.1μF/25V	1	1	1	1	1	1
C26	GRM4B223K1HY	Capacitor, 0.022μF/50V	1	1	1	1	1	1
C27	ECEA1VKA220	Capacitor, 22μF/35V	1	1	1	1	1	1
C28	GRM4F105Z1CY	Capacitor, 1.0μF/16V	1	1	1	1	1	1
C29	ECEA1CKA220	Capacitor, 22μF/16V	1	1	1	1	1	1
C30	ECEA1CKA220	Capacitor, 22μF/16V	1	1	1	1	1	1
C31	GRM4B222K1HY	Capacitor, 2200pF/50V	1	1	1	1	1	1
C32	GRM4F104Z1EY	Capacitor, 0.1μF/25V	0	0	0	1	1	1
C33	GRM4F104Z1EY	Capacitor, 0.1μF/25V	1	1	1	1	1	1
C34	ECEA1CKA220	Capacitor, 22μF/16V	1	1	1	1	1	1
C35	GRM4F104Z1EY	Capacitor, 0.1μF/25V	1	1	1	1	1	1
C36	ECEA1CKA220	Capacitor, 22μF/16V	1	1	1	1	1	1
C40	ECEA1CKA220	Capacitor, 22μF/16V	1	1	1	1	1	1
C41	ECEA1CKA220	Capacitor, 22μF/16V	1	1	1	1	1	1
C42	ECEA1CKA220	Capacitor, 22μF/16V	1	1	1	1	1	1
C44	ECEA1CKA220	Capacitor, 22μF/16V	1	1	1	1	1	1
C45	ECEA1VKA220	Capacitor, 22μF/35V	1	1	1	1	1	1
C47	GRM4B102K1HY	Capacitor, 1000pF/50V	1	1	1	1	1	1
C48	GRM4B222K1HY	Capacitor, 2200pF/50V	1	1	1	1	1	1
C49	GRM4B222K1HY	Capacitor, 2200pF/50V	1	1	1	1	1	1
C50	GRM4B222K1HY	Capacitor, 2200pF/50V	1	1	1	1	1	1
C51	GRM4B222K1HY	Capacitor, 2200pF/50V	1	1	1	1	1	1
C52	GRM4F104Z1EY	Capacitor, 0.1μF/25V	0	0	0	1	1	1
C53	GRM4F104Z1EY	Capacitor, 0.1μF/25V	1	1	1	1	1	1
C54	ECEA1CKA220	Capacitor, 22μF/16V	1	1	1	1	1	1
C58	ECEA1CKA220	Capacitor, 22μF/16V	1	1	1	1	1	1
C59	GRM4F104Z1EY	Capacitor, 0.1μF/25V	1	1	1	1	1	1

Ref. No.	Part No.	Description	DZYNA			DZYNA		
			1372**	1372B**	1372D**	1372A**	1372C**	1372E**
C60	ECEA1CKA220	Capacitor, 22μF/16V	1	1	1	1	1	1
C65	GRM4B332KIIIY	Capacitor, 3300pF/50V	1	1	1	1	1	1
C66	ECEA1CKA220	Capacitor, 22μF/16V	1	1	1	1	1	1
C67	GRM4B472K1IIY	Capacitor, 4700pF/50V	1	1	1	1	1	1
C71	GRM4F104Z1EY	Capacitor, 0.1μF/25V	1	1	1	1	1	1
C72	GRM4B103K1IIY	Capacitor, 0.01μF/50V	1	1	1	1	1	1
C73	ECEA0JKA101	Capacitor, 100μF/6.3V	1	1	1	1	1	1
C74	GRM4B102KIIIY	Capacitor, 1000pF/50V	1	1	1	1	1	1
C75	GRM4B102K1IIY	Capacitor, 1000pF/50V	1	1	1	1	1	1
C76	ECEA1CKA220	Capacitor, 22μF/16V	1	1	1	1	1	1
C77	GRM4F104Z1EY	Capacitor, 0.1μF/25V	1	1	1	1	1	1
C78	GRM4B102KIIIY	Capacitor, 1000pF/50V	1	1	1	1	1	1
C79	GRM4B102KIIIY	Capacitor, 1000pF/50V	1	1	1	1	1	1
C151	GRM4F104Z1EY	Capacitor, 0.1μF/25V	1	1	1	1	1	1
C152	GRM4F104Z1EY	Capacitor, 0.1μF/25V	1	1	1	1	1	1
C156	GRM4B222KIIIY	Capacitor, 2200pF/50V	1	1	1	1	1	1
C157	GRM4B222KIIIY	Capacitor, 2200pF/50V	1	1	1	1	1	1
C158	GRM4B471K1IIY	Capacitor, 470pF/50V	1	1	1	1	1	1
C159	GRM4B102KIIIY	Capacitor, 1000pF/50V	1	1	1	1	1	1
C160	GRM4F104Z1EY	Capacitor, 0.1μF/25V	0	0	0	1	1	1
C161	GRM4F104Z1EY	Capacitor, 0.1μF/25V	1	1	1	0	0	0
C162	GRM4F104Z1EY	Capacitor, 0.1μF/25V	1	1	1	0	0	0
C165	GRM4B102KIIIY	Capacitor, 1000pF/50V	1	1	1	1	1	1
C166	GRM4B102KIIIY	Capacitor, 1000pF/50V	1	1	1	1	1	1
C167	GRM4B221KIIIY	Capacitor, 220pF/50V	1	1	1	1	1	1
C168	GRM4F104Z1EY	Capacitor, 0.1μF/25V	1	1	1	1	1	1
C169	GRM4F105Z1CY	Capacitor, 1.0μF/16V	1	1	1	1	1	1
C170	GRM4C101J1IIY	Capacitor, 100pF/50V	1	1	1	1	1	1
C171	GRM4F105Z1CY	Capacitor, 1.0μF/16V	1	1	1	1	1	1
C172	GRM4F104Z1EY	Capacitor, 0.1μF/25V	1	1	1	1	1	1
C178	GRM4F104Z1EY	Capacitor, 0.1μF/25V	1	1	1	1	1	1
C185	GRM4B471K1IIY	Capacitor, 470pF/50V	1	1	1	1	1	1
C186	GRM4B471K1IIY	Capacitor, 470pF/50V	1	1	1	1	1	1
C187	GRM4B471K1IIY	Capacitor, 470pF/50V	1	1	1	1	1	1
C188	GRM4B471K1IIY	Capacitor, 470pF/50V	1	1	1	1	1	1
C189	GRM4B471K1IIY	Capacitor, 470pF/50V	1	1	1	1	1	1
C190	GRM4B471K1IIY	Capacitor, 470pF/50V	1	1	1	1	1	1
C191	GRM4B471K1IIY	Capacitor, 470pF/50V	1	1	1	1	1	1
C193	GRM4F104Z1EY	Capacitor, 0.1μF/25V	1	1	1	1	1	1
C194	GRM4C220J1IIY	Capacitor, 22pF/50V	1	1	1	1	1	1
C195	GRM4C050J1IIY	Capacitor, 5.0pF/50V	1	1	1	1	1	1
C196	GRM4C050J1IIY	Capacitor, 5.0pF/50V	1	1	1	1	1	1
C197	GRM4F104Z1EY	Capacitor, 0.1μF/25V	1	1	1	1	1	1
C198	GRM4C220J1IIY	Capacitor, 22pF/50V	1	1	1	1	1	1
C201	GRM4F104Z1EY	Capacitor, 0.1μF/25V	1	1	1	1	1	1
C202	GRM4F224Z1CY	Capacitor, 0.22μF/16V	1	1	1	1	1	1
C207	GRM4F104Z1EY	Capacitor, 0.1μF/25V	1	1	1	1	1	1
C208	GRM4B102KIIIY	Capacitor, 1000pF/50V	1	1	1	1	1	1
C209	GRM4F104Z1EY	Capacitor, 0.1μF/25V	1	1	1	1	1	1
C210	GRM4B102KIIIY	Capacitor, 1000pF/50V	1	1	1	1	1	1
C211	GRM4F104Z1EY	Capacitor, 0.1μF/25V	1	1	1	1	1	1
C212	GRM4B102KIIIY	Capacitor, 1000pF/50V	0	0	0	1	1	1
C213	GRM4F104Z1EY	Capacitor, 0.1μF/25V	1	1	1	1	1	1
C214	GRM4F104Z1EY	Capacitor, 0.1μF/25V	1	1	1	1	1	1
C215	GRM4C101J1IIY	Capacitor, 100pF/50V	1	1	1	1	1	1
C216	GRM4F104Z1EY	Capacitor, 0.1μF/25V	1	1	1	1	1	1
C217	GRM4C330J1IIY	Capacitor, 33pF/50V	1	1	1	1	1	1
C218	GRM4F104Z1EY	Capacitor, 0.1μF/25V	1	1	1	1	1	1
C219	GRM4B331K1IIY	Capacitor, 330pF/50V	1	1	1	1	1	1
C220	GRM4B102KIIIY	Capacitor, 1000pF/50V	1	1	1	1	1	1
C221	GRM4B102KIIIY	Capacitor, 1000pF/50V	1	1	1	1	1	1
C222	GRM4B102KIIIY	Capacitor, 1000pF/50V	1	1	1	1	1	1
C223	GRM4B102KIIIY	Capacitor, 1000pF/50V	1	1	1	1	1	1
C227	GRM4F104Z1EY	Capacitor, 0.1μF/25V	1	1	1	1	1	1
C228	GRM4B102KIIIY	Capacitor, 1000pF/50V	1	1	1	1	1	1
C501	GRM4C101J1IIY	Capacitor, 100pF/50V	1	1	1	1	1	1

Ref. No.	Part No.	Description	DZYNA			DZYNA		
			1372**	1372B**	1372D**	1372A**	1372C**	1372E**
C502	GRM4C101J1HY	Capacitor, 100pF/50V	1	1	1	1	1	1
C503	GRM4C101J1HY	Capacitor, 100pF/50V	1	1	1	1	1	1
C504	GRM4C101J1HY	Capacitor, 100pF/50V	1	1	1	1	1	1
C505	GRM4C101J1HY	Capacitor, 100pF/50V	1	1	1	1	1	1
C506	GRM4C101J1HY	Capacitor, 100pF/50V	1	1	1	1	1	1
C507	GRM4F104Z1HY	Capacitor, 0.1μF/50V	1	1	1	1	1	1
C508	GRM4F104Z1HY	Capacitor, 0.1μF/50V	1	1	1	1	1	1
C509	GRM4F104Z1EY	Capacitor, 0.1μF/25V	1	1	1	1	1	1
C510	GRM4F104Z1EY	Capacitor, 0.1μF/25V	1	1	1	1	1	1
C511	GRM4F104Z1HY	Capacitor, 0.1μF/50V	1	1	1	1	1	1
C512	GRM4F104Z1EY	Capacitor, 0.1μF/25V	1	1	1	1	1	1
C514	GRM4F104Z1EY	Capacitor, 0.1μF/25V	1	1	1	1	1	1
C515	GRM4F104Z1EY	Capacitor, 0.1μF/25V	1	1	1	1	1	1
C516	GRM4F104Z1EY	Capacitor, 0.1μF/25V	1	1	1	1	1	1
C519	GRM4F104Z1EY	Capacitor, 0.1μF/25V	0	0	0	1	1	1
C635	ECEA1CKA220	Capacitor, 22μF/16V	1	1	1	1	1	1
C636	ECEA1CKA220	Capacitor, 22μF/16V	1	1	1	1	1	1
C651	GRM4B473K1EY	Capacitor, 0.01μF/25V	1	1	1	1	1	1
C652	GRM4B223K1HY	Capacitor, 0.022μF/50V	1	1	1	1	1	1
C653	GRM4F474Z1CY	Capacitor, 0.1μF/16V	1	1	1	1	1	1
C654	GRM4B221K1HY	Capacitor, 220pF/50V	1	1	1	1	1	1
C655	GRM4B102K1HY	Capacitor, 1000pF/50V	1	1	1	1	1	1
C656	GRM4C561J1HY	Capacitor, 560pF/50V	1	1	1	1	1	1
C663	GRM4F104Z1EY	Capacitor, 0.1μF/25V	1	1	1	1	1	1
C664	GRM4F104Z1EY	Capacitor, 0.1μF/25V	1	1	1	1	1	1
C665	GRM4F104Z1EY	Capacitor, 0.1μF/25V	1	1	1	1	1	1
C670	GRM4F104Z1EY	Capacitor, 0.1μF/25V	1	1	1	1	1	1
C671	GRM4B221K1HY	Capacitor, 220pF/50V	1	1	1	1	1	1
C763	GRM4B102K1HY	Capacitor, 1000pF/50V	1	1	1	1	1	1
C764	GRM4B102K1HY	Capacitor, 1000pF/50V	1	1	1	1	1	1
C772	GRM4B822J1HY	Capacitor, 8200pF/50V	1	1	1	1	1	1
C773	GRM4B221K1HY	Capacitor, 220pF/50V	1	1	1	1	1	1
C776	GRM4B102K1HY	Capacitor, 1000pF/50V	1	1	1	1	1	1
C778	GRM4B272K1HY	Capacitor, 2700pF/50V	1	1	1	1	1	1
C779	GRM4F104Z1EY	Capacitor, 0.1μF/25V	1	1	1	1	1	1
C780	GRM4F104Z1EY	Capacitor, 0.1μF/25V	1	1	1	1	1	1
C781	GRM4C471J1HY	Capacitor, 470pF/50V	1	1	1	1	1	1
C782	GRM4B473K1EY	Capacitor, 0.01μF/25V	1	1	1	1	1	1
C783	GRM4B103J1HY	Capacitor, 0.01μF/50V	1	1	1	1	1	1
C784	GRM4B223K1HY	Capacitor, 0.022μF/50V	1	1	1	1	1	1
C785	GRM4F474Z1CY	Capacitor, 0.1μF/16V	1	1	1	1	1	1
C786	GRM4F105Z1CY	Capacitor, 1.0μF/16V	1	1	1	1	1	1
C788	GRM4B102K1HY	Capacitor, 1000pF/50V	1	1	1	1	1	1
C797	GRM4C100D1HY	Capacitor, 10pF/50V	1	1	1	1	1	1
C798	GRM4C220J1HY	Capacitor, 22pF/50V	1	1	1	1	1	1
C799	GRM4F104Z1EY	Capacitor, 0.1μF/25V	1	1	1	1	1	1
C811	GRM4F104Z1EY	Capacitor, 0.1μF/25V	1	1	1	1	1	1
RV1	RVG4H01203VM	Variable Resister	1	1	1	1	1	1
CN1	B6B-PH-K-S	Connector	1	1	1	1	1	1
CN2	B16B-PHD-SS	Connector	1	1	1	1	1	1
CN3	B2B-PH-K-S	Connector	1	1	1	1	1	1
CN4	B6B-PH-K-S	Connector	1	1	1	1	1	1
CN5	B13B-PH-K-S	Connector	1	1	1	1	1	1
CN6	F3FC20PADSA	Connector	1	1	1	1	1	1
CN7	B10B-PH-K-S	Connector	1	1	1	1	1	1
CN8	B9B-PH-K-M	Connector	1	1	1	1	1	1
CN23A	TX530PD2STN1	Connector	0	0	0	1	1	1
CNEY	Not used							

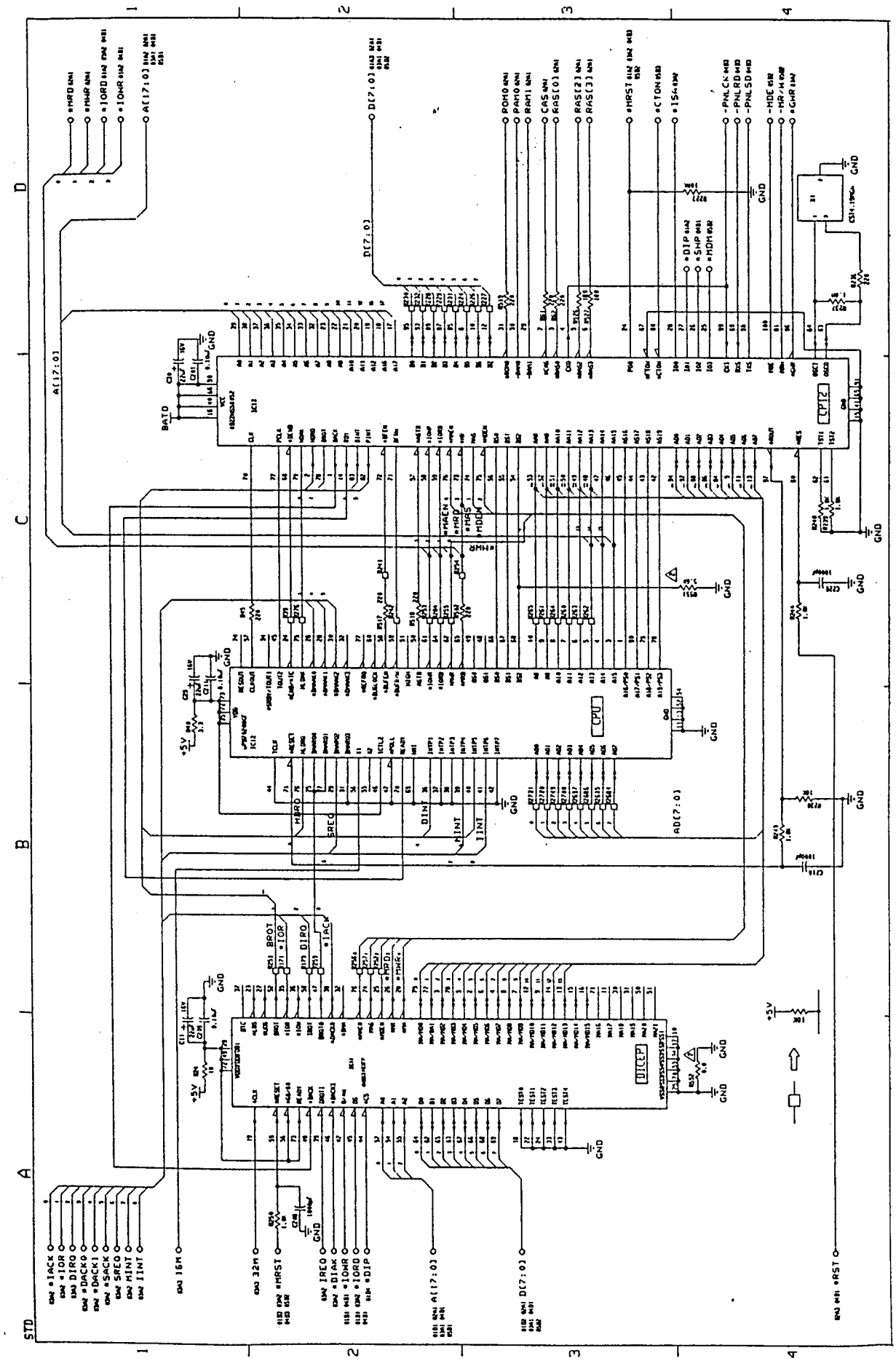


Fig. 3 Facsimile Control Board (FCBM)

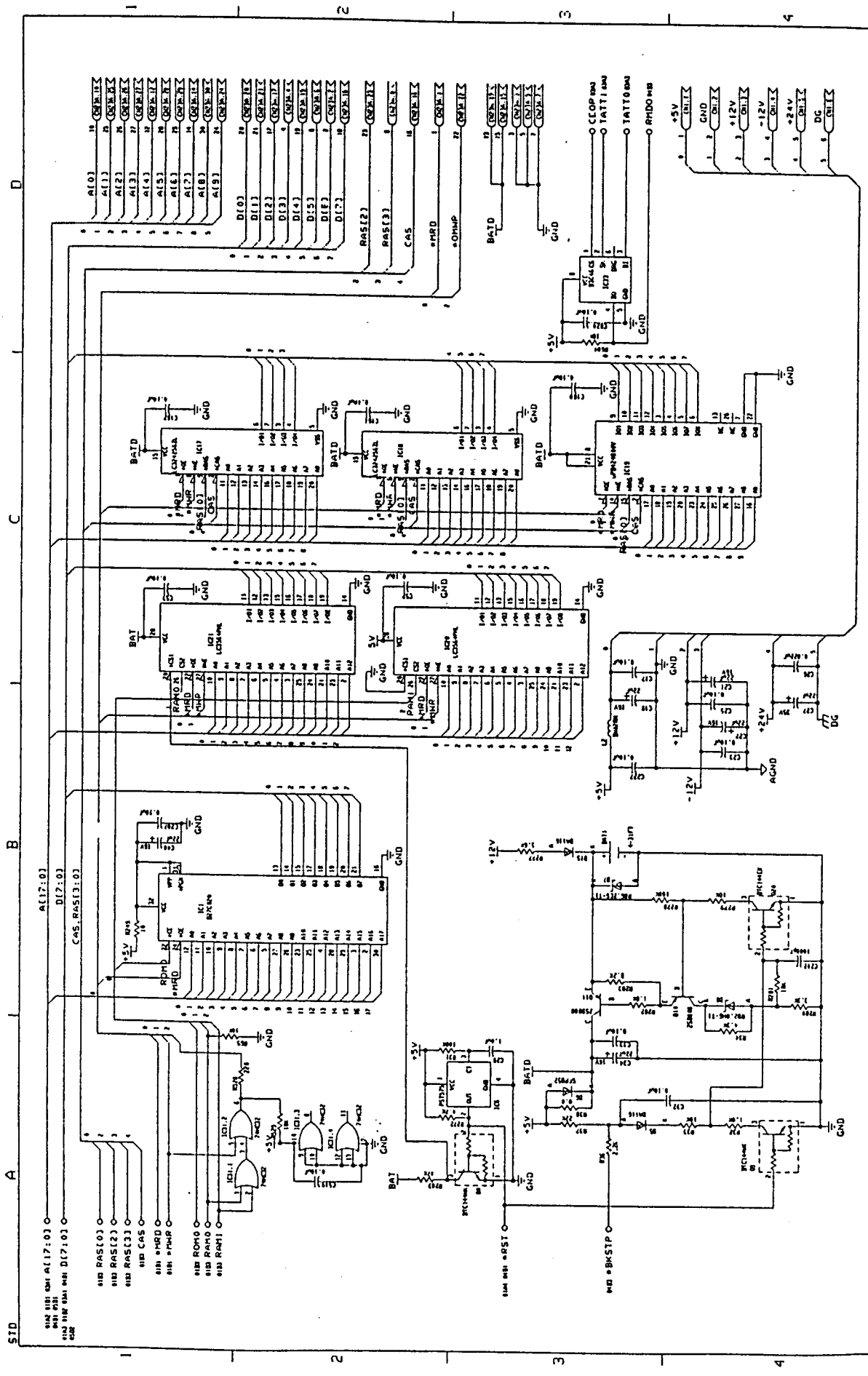


Fig. 4 Facsimile Control Board (FCBM)

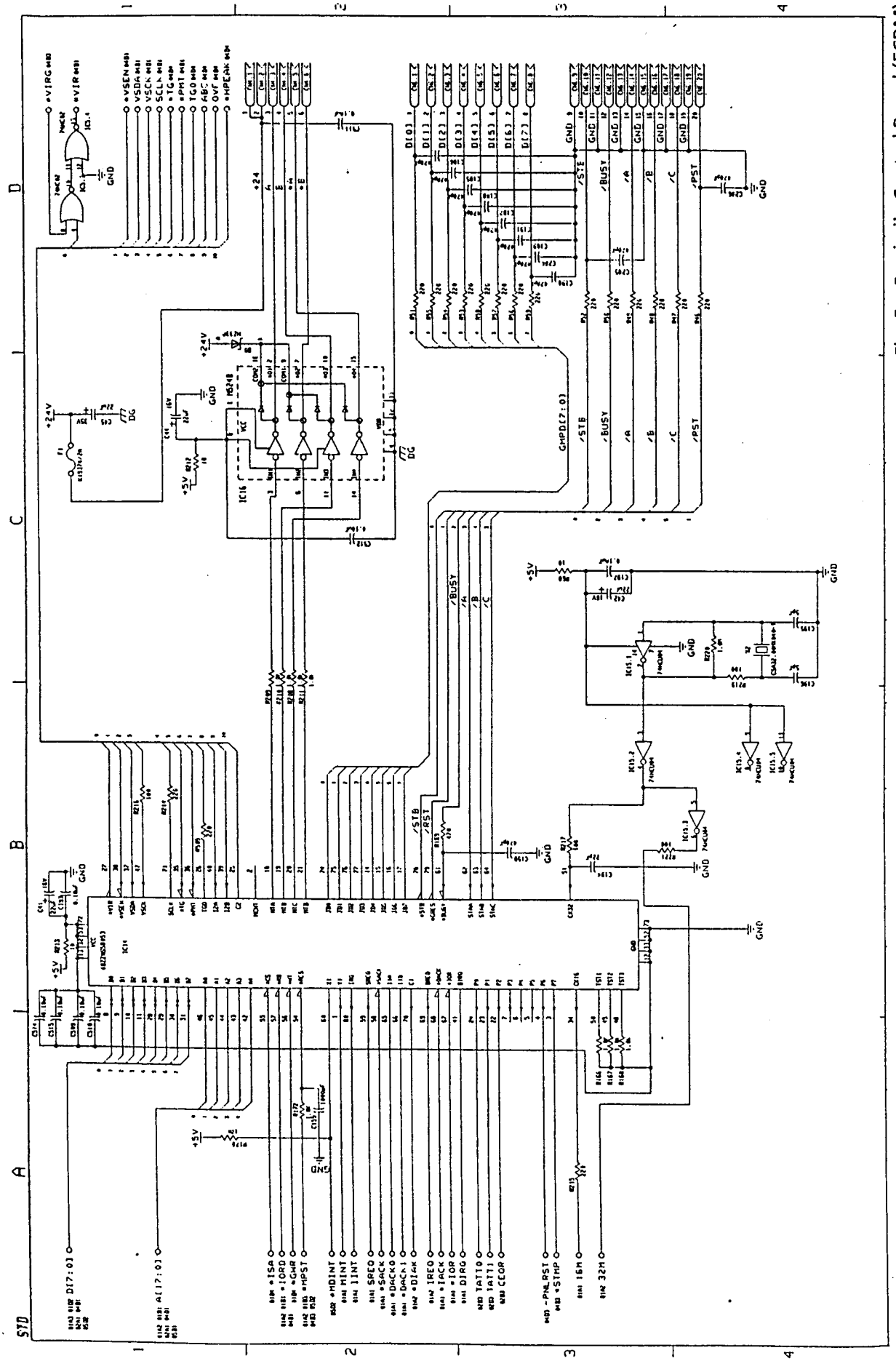


Fig. 5 Facsimile Control Board (FCBM)

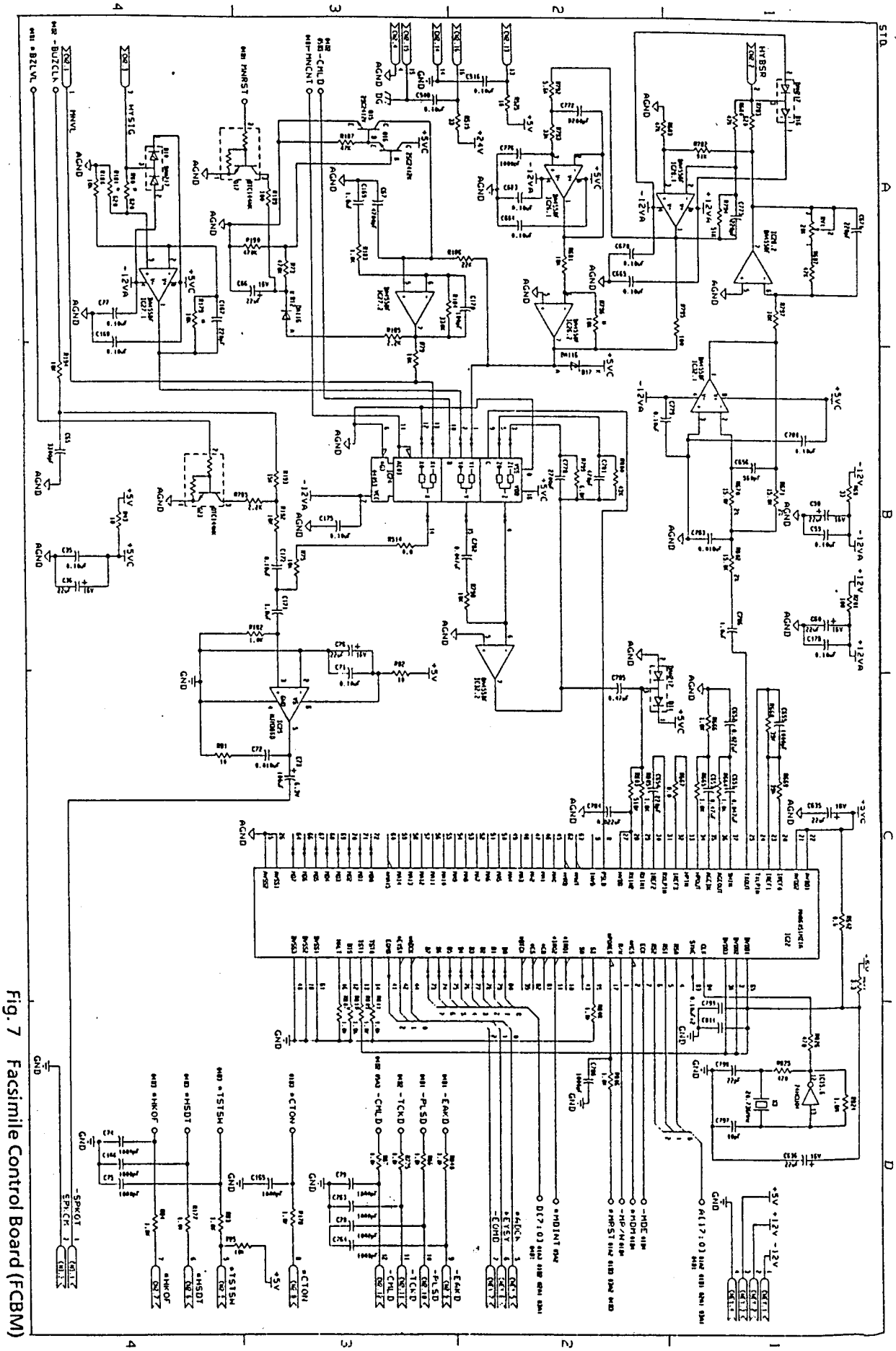


Fig. 7 Facsimile Control Board (FCBM)

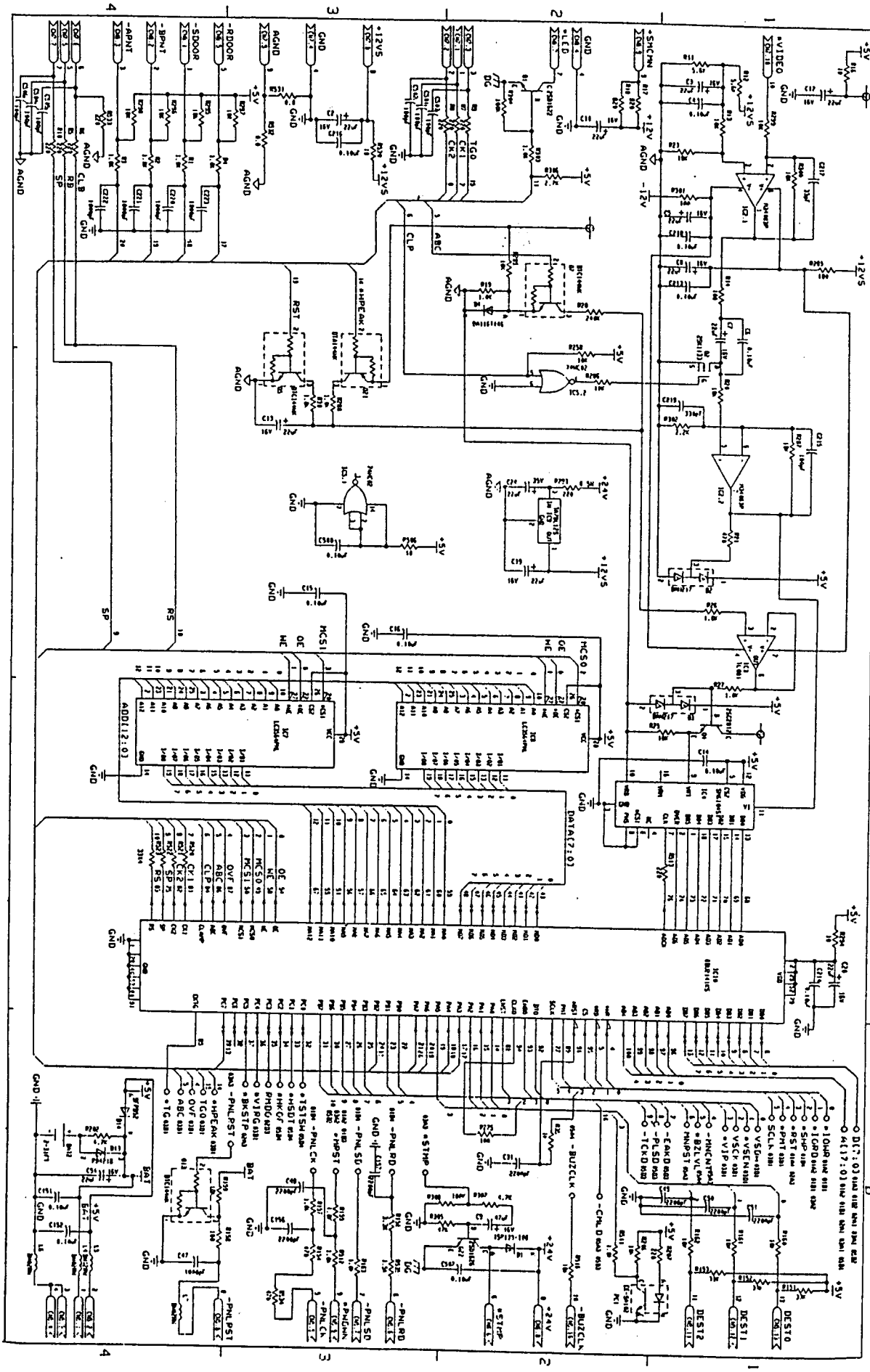


Fig. 6 Facsimile Control Board (FCBM)

Fig. 8 Facsimile Control Board / Components Loaded Side

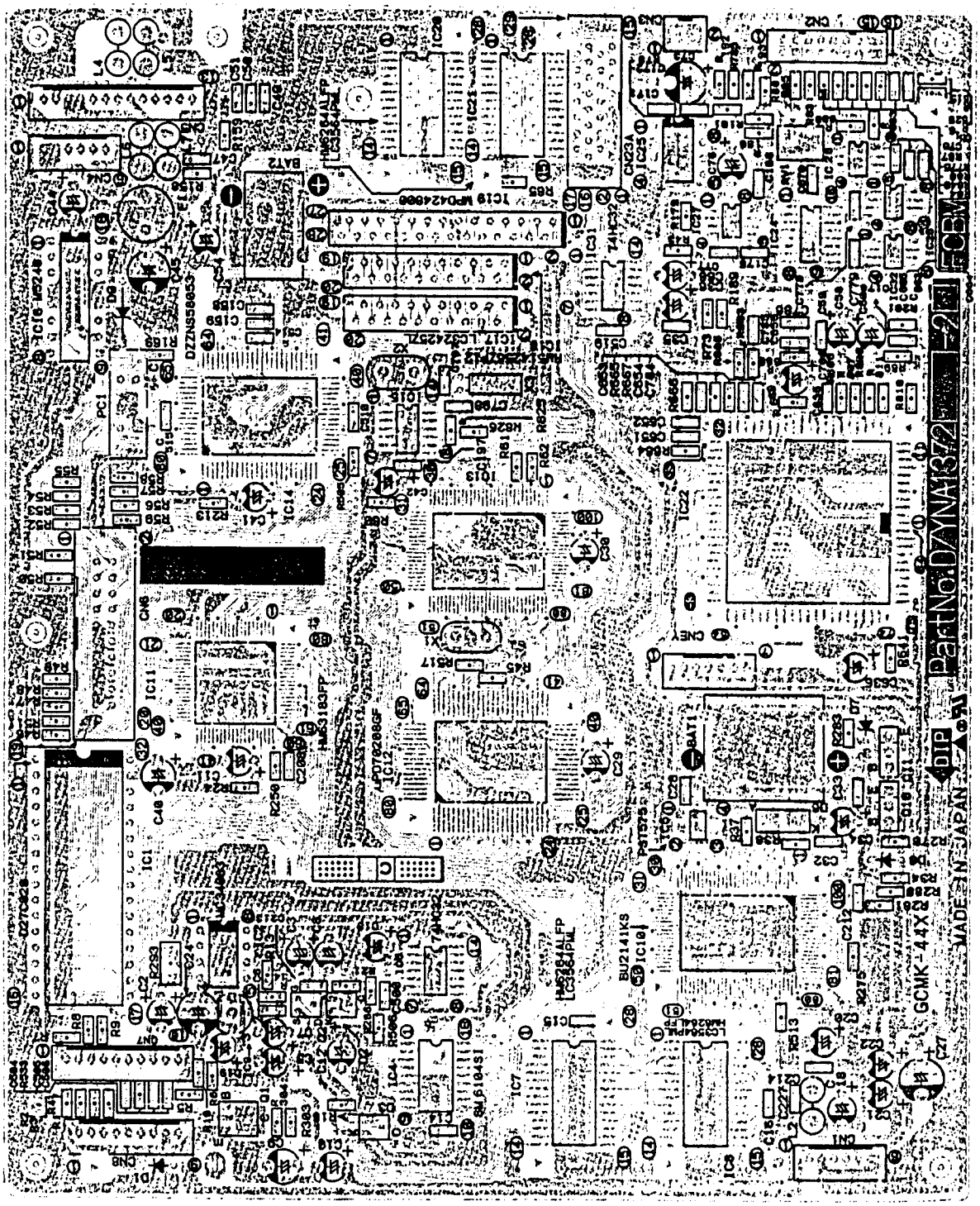
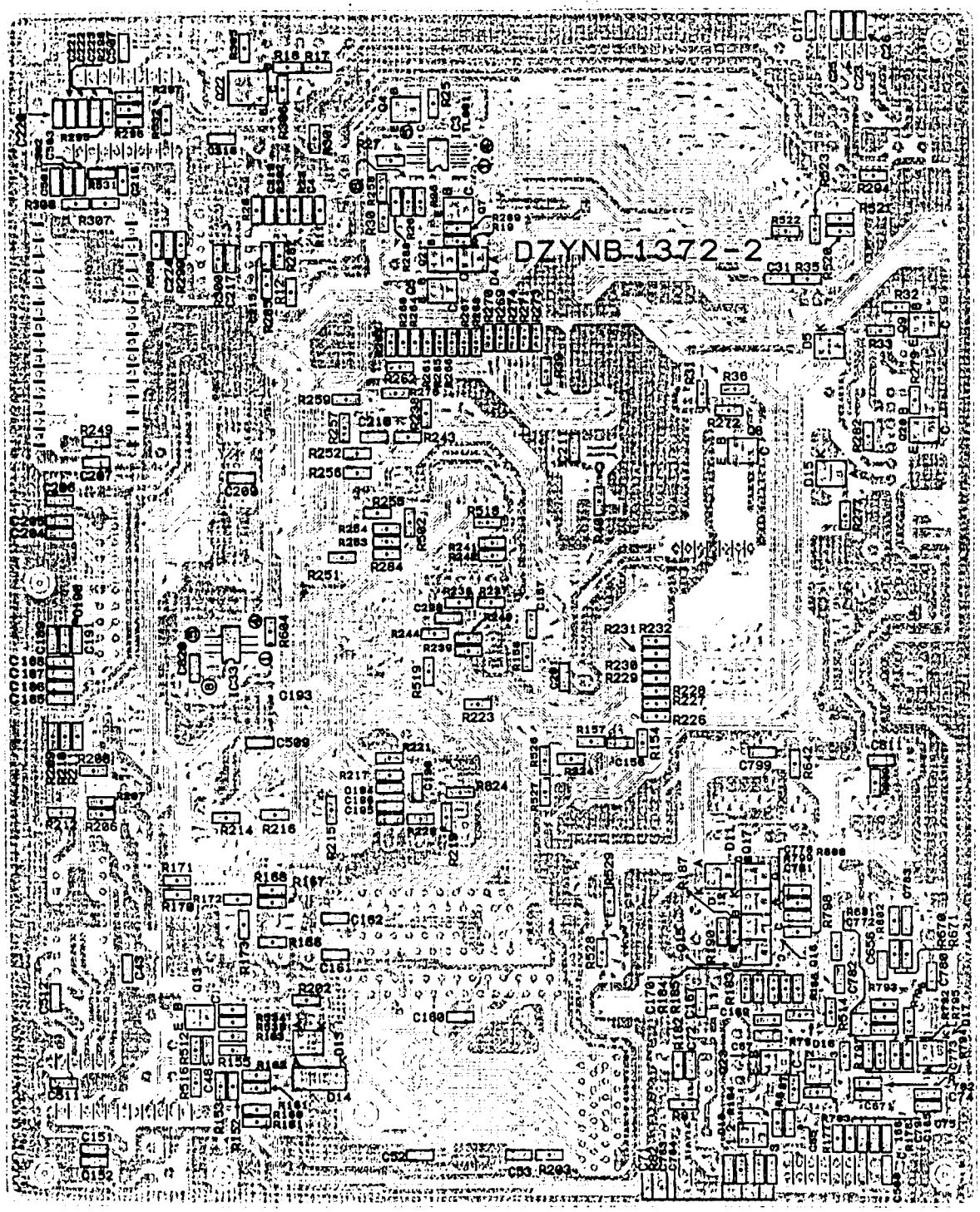


Fig. 9 Facsimile Control Board / Soldering Side



7.4 Line Control Unit (LCE)

Ref. No.	Part No.	Description	DZYNA1379[ ]																			
			E	B	G	L	H	I	M	R	S	P	F	N	K	T	W	Q	A	D	J	V
PC1	PS2505-1	Photo Coupler	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PC2	PS2501-1LK		1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Q1	DTC143ZSTP	Transistor	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Q2	DTC143ZSTP	Transistor	1	1	1	1	1	1	0	1	1	1	1	1	1	1	1	1	1	1	1	1
Q3	DTC143ZSTP	Transistor	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Q4	DTC143ZSTP	Transistor	0	1	1	0	0	0	1	0	0	0	0	0	1	0	1	0	1	0	0	0
ZD1	RD9.1EW-T1	Zener Diode	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
ZD2	RD9.1EW-T1	Zener Diode	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
D1	1SS131T-77	Diode	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
D2	1SS131T-77	Diode	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
D3	1SS131T-77	Diode	1	1	1	1	1	1	0	1	1	1	1	1	1	1	1	1	1	1	1	1
D4	1SS131T-77	Diode	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
D5	1SS131T-77	Diode	0	1	1	0	0	0	1	0	0	0	0	0	1	0	1	0	1	0	0	0
L1	SBT-0260TF	Coil	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
L2	SBT-0260TF	Coil	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
L3	ERDS2TC0T	Resistor	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
L4	ERDS2TC0T	Resistor	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
VS1	VR-61SSW	Varistor	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
SA1	DSA242MA05F25	Surge Absorber	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SA1	DSA401MSCF25		1	0	1	0	1	1	0	1	1	1	0	1	1	1	0	1	1	1	1	1
SA2	DSA401MSCF25		1	0	1	0	1	1	0	1	1	1	0	1	1	1	0	1	1	0	1	1
SA2	DSA242MA05F25		0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
VR1	EWAU1AT04B53	Variable Resistor	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
T1	ETA-28Z23AY	Line Transformer	1	0	0	0	1	1	0	1	0	1	1	0	0	1	0	1	1	1	1	1
	90973		0	1	0	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0
	90975		0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	62159		0	0	0	0	0	0	1	0	0	0	0	1	0	0	0	0	0	0	0	0
	63212		0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	62059A		0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0
T2	ETA-19Z109AY		1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
F1	K19372	Fuse	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1
	ERSD2TC0	Fuse	1	0	1	0	1	1	1	1	1	1	1	1	1	1	1	1	0	0	0	0
CN10	B16B-PHD-SS	Connector,16P	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
ARG	TW-4BS-2K	Connector	1	1	1	0	1	1	0	1	1	1	0	1	1	1	0	1	1	0	0	0
GND	Not used		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
FG	TW-4BS-2K	Connector	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
ZNR2	NV100D14	Varistor	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
VR1	EWAU1AT04B53	Variable Resister	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0

Ref. No.	Part No.	Description	DZYNA1379[ ]																			
			E	B	G	L	H	I	M	R	S	P	F	N	K	T	W	Q	A	D	J	V
RL1	URA-1H	Relay (TE)	1	0	1	1	1	1	1	1	0	1	1	1	1	1	1	1	1	1	1	1
RL1	URA-1H	Relay (TE)	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0
RL2	MR622-24S2R	Relay (CML)	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
RL3	AJK8342	Relay (TCK)	1	1	1	1	1	1	0	1	1	1	1	1	1	1	1	1	1	1	1	1
RL4	G6BS1MGDC24V	Relay (PLS)	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
RL5	AJK8342	Relay (EK)	0	1	1	0	0	0	1	0	0	0	0	0	1	0	1	0	1	0	0	0
R1	ERDS2TC0	Resistor, 0Ω/0.25W	0	0	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	ERDS2TJ100	Resistor, 10Ω/0.25W	0	0	0	0	0	1	0	0	1	0	0	1	0	0	0	0	1	0	0	0
	ERDS2TJ470	Resistor, 47Ω/0.25W	1	1	0	0	0	0	0	1	0	1	1	0	1	1	1	1	0	1	1	1
	ERDS2TJ471	Resistor, 470Ω/0.25W	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
R2	ERDS2TJ100	Resistor, 10Ω/0.25W	0	0	0	0	0	1	0	0	1	0	0	1	0	0	0	0	0	0	0	0
	ERDS2TJ470	Resistor, 47Ω/0.25W	1	1	0	0	0	0	0	1	0	1	1	0	1	1	1	1	1	1	1	1
	ERDS2TJ471	Resistor, 470Ω/0.25W	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	ERDS2TC0	Resistor, 0Ω/0.25W	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
R3	ERDS2TJ150	Resistor, 15Ω/0.25W	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
R4	ERDS2TJ620	Resistor, 62Ω/0.25W	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	ERDS2TJ680	Resistor, 68Ω/0.25W	1	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	0	0	0
R5	ERDS2TJ102	Resistor, 1KΩ/0.25W	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0
	ERDS2TJ330	Resistor, 33Ω/0.25W	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	ERDS2TJ561	Resistor, 560Ω/0.25W	0	0	0	1	1	0	0	1	0	0	1	1	1	1	1	0	0	0	1	1
	ERDS2TJ621	Resistor, 620Ω/0.25W	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1	0	0
	ERDS2TJ101	Resistor, 100Ω/0.25W	0	0	0	0	0	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0
	ERDS2TJ221	Resistor, 220Ω/0.25W	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0
R6	ERDS2TC0	Resistor, 00Ω/0.25W	1	1	0	0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
	ERG1SJ151	Resistor, 150Ω/01W	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	ERDS2TJ100	Resistor, 10Ω/0.25W	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
R7	ERDS2TC0	Resistor, 0Ω/0.25W	1	1	0	0	1	1	0	1	1	1	1	1	1	1	1	1	1	1	1	1
	ERG1SJ151	Resistor, 150Ω/1W	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	FL7H272J	Inductor	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0
	ERDS2TJ100	Resistor, 10Ω/0.25W	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
R8	ERDS2TC0	Resistor, 0Ω/0.25W	1	0	0	0	1	1	0	1	1	1	1	0	0	1	0	1	1	1	1	1
	ERG1SJ100	Resistor, 10Ω/1W	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	ERDS2TJ561	Resistor, 560Ω/0.25W	0	0	0	0	0	0	1	0	0	0	0	1	0	0	0	0	0	0	0	0
	ERDS2TJ331	Resistor, 330Ω/0.25W	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
R9	ERDS2TC0	Resistor, 0Ω/0.25W	1	1	1	0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
	ERG1SJ100	Resistor, 10Ω/1W	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
R10	ERDS2TJ101	Resistor, 100Ω/0.25W	0	1	0	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0
	ERDS2TC0	Resistor, 0Ω/0.25W	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	1	0	0	0

Ref. No.	Part No.	Description	DZYNA1379[ ]																		
			E	B	G	L	H	I	M	R	S	P	F	N	K	T	W	Q	A	D	J	V
R12	ERDS2TJ683	Resistor, 68KΩ/0.25W	1	1	0	0	0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0
	ERDS2TJ124	Resistor, 120KΩ/0.25W	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	ERDS2TJ103	Resistor, 10KΩ/0.25W	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	ERDS2TJ333	Resistor, 33KΩ/0.25W	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	ERDS2TJ393	Resistor, 39KΩ/0.25W	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	ERDS2TJ183	Resistor, 18KΩ/0.25W	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
R13	ERDS2TJ683	Resistor, 68KΩ/0.25W	1	1	0	0	0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0
	ERDS2TJ103	Resistor, 10KΩ/0.25W	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	ERDS2TJ333	Resistor, 33KΩ/0.25W	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	ERDS2TJ393	Resistor, 39KΩ/0.25W	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	ERDS2TJ183	Resistor, 18KΩ/0.25W	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
R14	ERDS2TJ472	Resistor, 4.7KΩ/0.25W	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1	0
	ERDS2TJ103	Resistor, 10KΩ/0.25W	0	0	0	1	0	0	0	1	0	1	1	0	0	1	0	0	0	0	0	0
	ERDS2TJ202	Resistor, 2KΩ/0.25W	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	ERDS2TJ392	Resistor, 3.9KΩ/0.25W	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0
	ERDS2TJ272	Resistor, 2.7KΩ/0.25W	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0
	ERDS2TJ332	Resistor, 3.3KΩ/0.25W	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0
	ERDS2TJ102	Resistor, 1KΩ/0.25W	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	ERDS2TJ331	Resistor, 330Ω/0.25W	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
	ERDS2TJ183	Resistor, 18KΩ/0.25W	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
R15	ERDS2TJ103	Resistor, 10KΩ/0.25W	1	1	0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
	ERDS2TJ682	Resistor, 6.8KΩ/0.25W	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
R16	ERDS2TJ222	Resistor, 2.2KΩ/0.25W	0	1	0	0	0	0	0	0	1	1	1	0	0	0	0	0	0	0	1	1
	ERDS2TJ103	Resistor, 10KΩ/0.25W	1	0	1	1	1	1	1	1	0	0	0	1	1	1	1	1	1	1	0	0
R17	ERDS2TJ473	Resistor, 47KΩ/0.25W	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	ERDS2TJ153	Resistor, 15KΩ/0.25W	1	1	1	1	0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
R18	ERDS2TJ153	Resistor, 15KΩ/0.25W	1	0	0	1	0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
R22	ERDS2TJ472	Resistor, 4.7KΩ/0.25W	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
R23	ERDS2TJ223	Resistor, 22KΩ/0.25W	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
R24	ERDS2TC0	Resistor, 0Ω/0.25W	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
R27	ERDS2TJ103	Resistor, 10KΩ/0.25W	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1

Ref. No.	Part No.	Description	DZYNA1379[ ]																			
			E	B	G	L	H	I	M	R	S	P	F	N	K	T	W	Q	A	D	J	V
MJ1	HJC021201212	Modular Jack	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
MJ2	900-71023D		0	1	0	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0
MJ3	TM5RJ3-66		1	0	0	1	1	1	1	1	1	1	1	1	0	1	0	1	1	1	1	1
MJ4	HJC021201212		1	0	0	0	1	1	0	0	0	0	0	0	0	1	0	0	0	1	1	1
C1	ECEA1CN101	Capacitor, 100μF/16V	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
C2	ECQE2105KF	Capacitor, 1.0μF/250V	1	1	1	0	1	1	1	1	1	0	1	1	1	1	1	1	1	0	1	1
	ECQE2155KF	Capacitor, 1.5μF/250V	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	ECQE2474KF	Capacitor, 0.47μF/250V	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0
C3	ECQE2224KF	Capacitor, 0.22μF/250V	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
C4	ECQE2223KF	Capacitor, 0.022μF/250V	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0
C5	ECQE2223KF	Capacitor, 0.022μF/250V	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	ECQM2332KZ	Capacitor, 0.0033μF/200V	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0
	ECQE2823JZ	Capacitor, 0.82μF/250V	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
C6	ECQE2333KZ	Capacitor, 0.033μF/250V	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0
C7	ECQV1H105JZ	Capacitor, 1.0μF/50V	0	1	1	1	0	0	0	0	0	0	0	1	1	0	1	0	0	0	0	0
	ECQV1H564JZ	Capacitor, 0.56μF/50V	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0
C8	ECQB1H473JF	Capacitor, 0.047μF/50V	1	0	0	0	1	1	0	1	0	1	1	0	0	1	0	1	1	1	1	1
	ECQV1H823JF	Capacitor, 0.082μF/50V	0	1	0	1	0	0	1	0	1	0	0	1	1	0	1	0	0	0	0	0
	ECQV1H333JZ	Capacitor, 0.033μF/50V	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
C9	ECQE2474KF3	Capacitor, 0.47μF/250V	1	1	1	0	1	1	1	1	1	1	1	1	1	1	1	0	1	1	1	0
	ECQE2105KF3	Capacitor, 1μF/250V	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	ECQE2155KF3	Capacitor, 1.5μF/250V	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0
	ECQE2185KF	Capacitor, 1.8μF/250V	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
C10	ECQB1H103KF	Capacitor, 0.01μF/50V	1	0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
	ECEA1CKA220	Capacitor, 22μF/16V	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
C12	ECQE2473KF	Capacitor, 0.47μF/250V	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
C13	ECEA1HKA010	Capacitor, 1μF/50V	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
C15	306295F10425	Capacitor, 1μF/50V	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
C16	ECEA1CKA220	Capacitor, 22μF/16V	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
C17	RPE132F104Z50	Capacitor, 0.1μF/50V	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
C18	ECEA1VKA220	Capacitor, 22μF/35V	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1

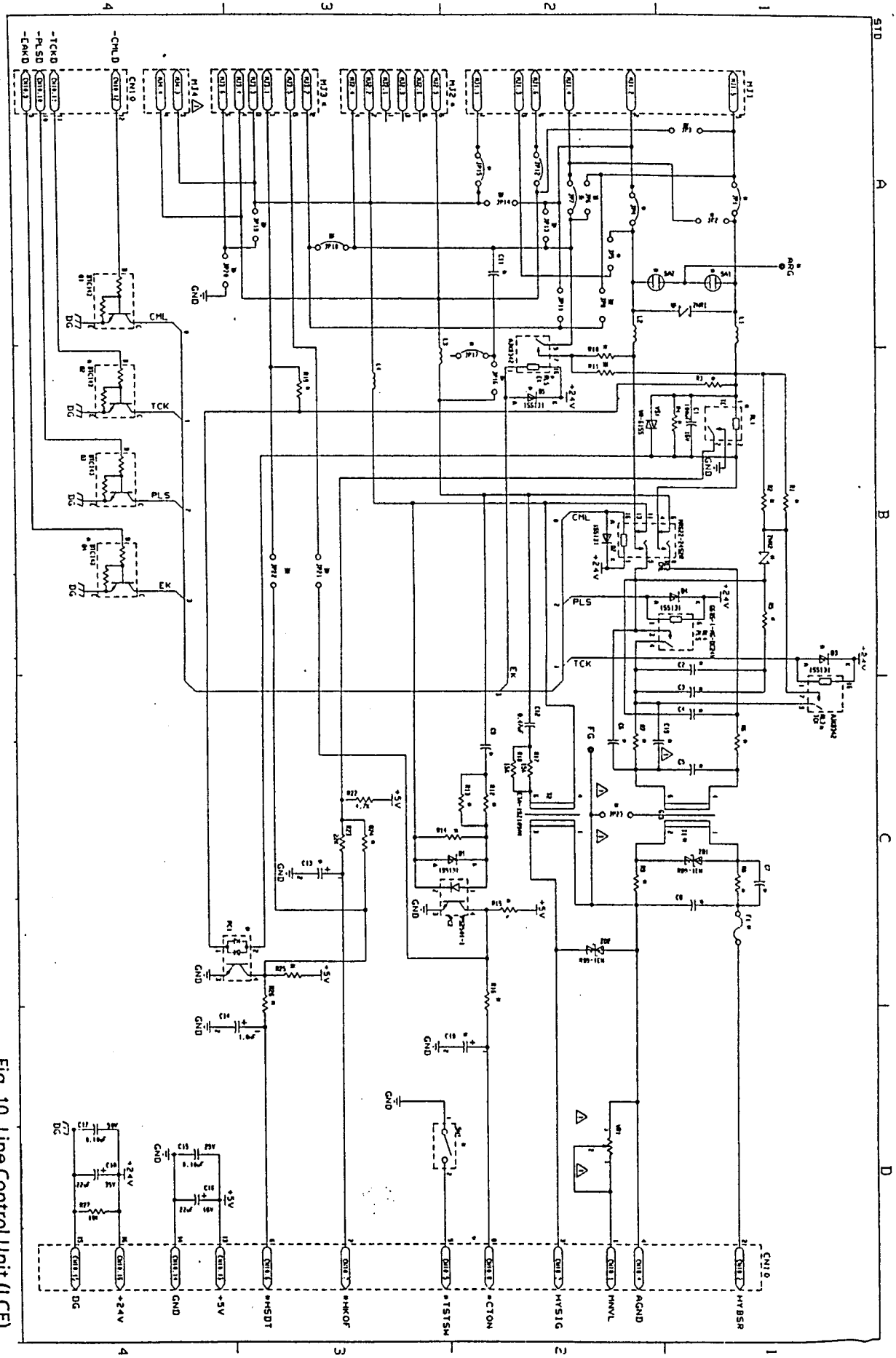


Fig. 10 Line Control Unit (LCE)

Ref. No.	Part No.	Description	DZYNA1379[ ]																			
			E	B	G	L	H	I	M	R	S	P	F	N	K	T	W	Q	A	D	J	V
J1	ERDS2TC0	Resister, 0Ω/0.25W	0	1	0	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0
J2	ERDS2TC0	Resister, 0Ω/0.25W	1	0	1	1	1	1	1	1	1	1	1	1	0	1	0	1	1	1	1	1
J3	ERDS2TC0	Resister, 0Ω/0.25W	0	0	0	1	0	1	0	1	1	0	0	0	0	0	0	0	0	1	0	0
J4	ERDS2TC0	Resister, 0Ω/0.25W	0	1	0	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0
J5	ERDS2TC0	Resister, 0Ω/0.25W	1	0	1	1	1	1	1	1	1	1	1	1	0	1	0	1	1	1	1	1
J7	ERDS2TC0	Resister, 0Ω/0.25W	0	1	0	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0
J10	ERDS2TC0	Resister, 0Ω/0.25W	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
J11	ERDS2TC0	Resister, 0Ω/0.25W	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	1	1
J12	ERDS2TC0	Resister, 0Ω/0.25W	1	0	1	0	1	0	1	0	0	1	1	1	1	1	1	1	1	0	1	1
J13	ERDS2TC0	Resister, 0Ω/0.25W	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	1	0	0	0
J14	ERDS2TC0	Resister, 0Ω/0.25W	0	0	0	1	0	1	0	1	1	0	0	0	0	0	0	0	0	1	0	0
J15	ERDS2TC0	Resister, 0Ω/0.25W	1	0	1	0	1	0	1	0	0	1	1	1	1	1	1	1	1	0	1	1
J19	ERDS2TC0	Resister, 0Ω/0.25W	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
J23	ERDS2TC0	Resister, 0Ω/0.25W	1	1	0	1	1	1	1	1	1	1	1	1	0	1	0	1	1	1	1	1

Fig. 11 Line Control Unit / Components Loaded Side

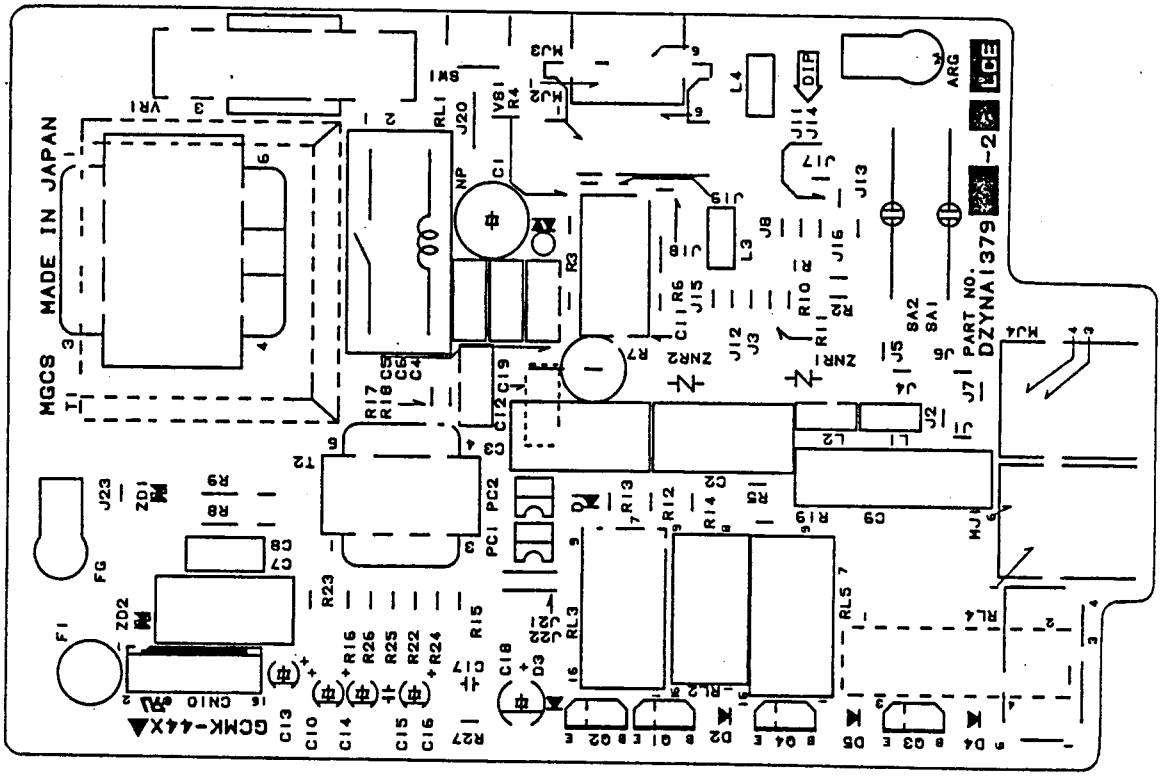
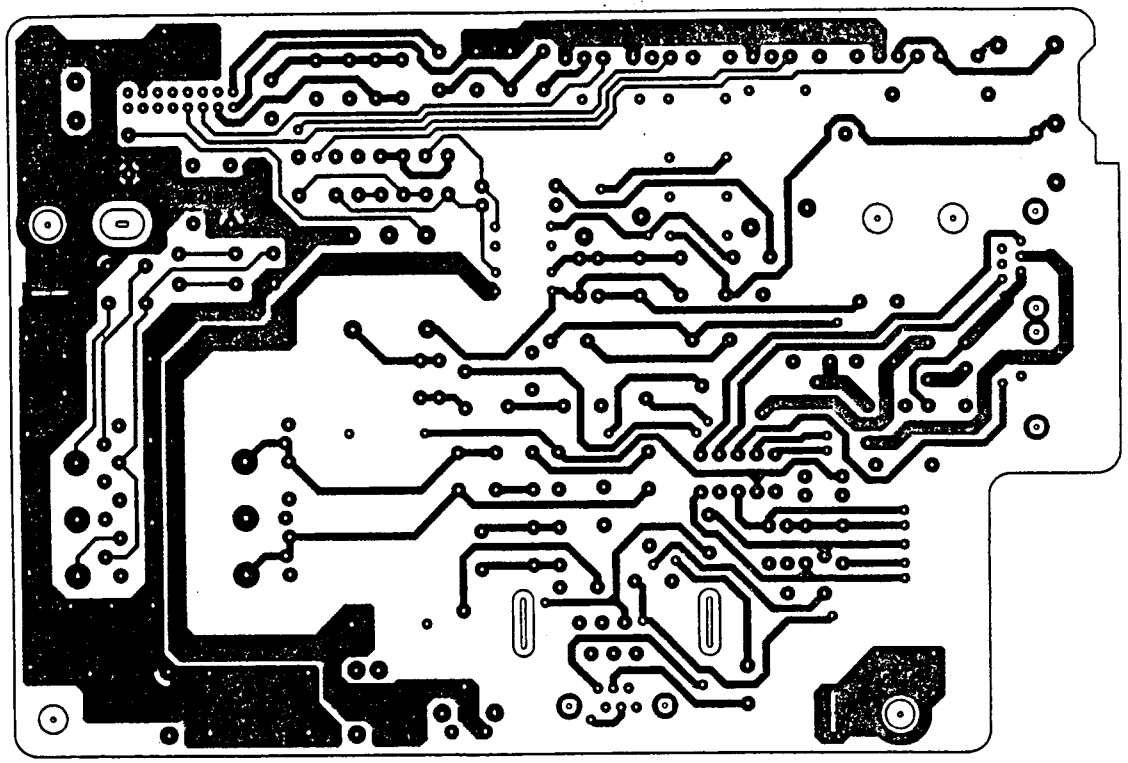


Fig. 12 Line Control Unit / Soldering Side



7.5 Control Panel (PNL)

Ref. No.	Part No.	Description	Models	
			UF-311	UF-312
IC1	DZZNS59008	Integrated Circuit	1	1
Q1	DTC124XLTL2	Transistor	1	1
Q2	DTC124XLTL2	Transistor	1	1
Q3	DTC124XLTL2	Transistor	1	1
Q4	DTC124XLTL2	Transistor	1	1
Q5	DTC124XLTL2	Transistor	1	1
Q6	DTC124XLTL2	Transistor	1	1
Q7	DTC124XLTL2	Transistor	1	1
Q8	DTC124XLTL2	Transistor	1	1
Q9	DTC124XLTL2	Transistor	0	1
D1	1SS131-77	Diode	0	1
D2	1SS131-77	Diode	0	1
X1	MXT-AY-095	Crystal Oscillator	1	1
X2	CST4.19MGW	Ceramic Oscillator	1	1
LED1	GL8EG2	LED	1	1
LED2	GL8EG2	LED	1	0
LED3	GL8PR21	LED	1	0
LED4	GL8EG2	LED	0	1
LED5	GL8EG2	LED	0	1
LED6	GL8EG2	LED	1	1
LED7	GL8EG2	LED	0	1
LED8	GL8EG2	LED	0	1
LED9	GL8EG2	LED	1	1
LED10	GL8EG2	LED	0	1
LED11	GL8EG2	LED	1	1
LED12	GL8EG2	LED	1	1
LED13	GL8EG2	LED	1	0
R1	ERDS2TJ104	Resistor, 100KΩ/0.25W	1	1
R2	ERDS2TJ102	Resistor, 1.0KΩ/0.25W	1	1
R3	ERDS2TJ102	Resistor, 1.0KΩ/0.25W	1	1
R4	ERDS2TJ103	Resistor, 10KΩ/0.25W	1	1
R5	ERDS2TJ104	Resistor, 100KΩ/0.25W	1	1
R6	ERDS2TJ102	Resistor, 1.0KΩ/0.25W	1	1
R7	ERDS2TJ104	Resistor, 100KΩ/0.25W	1	1
R8	ERDS2TJ102	Resistor, 1.0KΩ/0.25W	1	1
R9	ERDS2TJ104	Resistor, 100KΩ/0.25W	1	1
R10	ERDS2TJ103	Resistor, 10KΩ/0.25W	1	1
R11	ERDS2TJ102	Resistor, 1.0KΩ/0.25W	1	1
R12	ERDS2TJ334	Resistor, 330KΩ/0.25W	1	1
R13	ERDS2TJ113	Resistor, 11KΩ/0.25W	0	1
R14	ERDS2TJ101	Resistor, 110Ω/0.25W	0	1
R15	ERDS2TJ102	Resistor, 1.0KΩ/0.25W	0	1
R16	ERDS2TJ102	Resistor, 1.0KΩ/0.25W	0	1
R17	ERDS2TJ102	Resistor, 1.0KΩ/0.25W	0	1
R18	ERDS2TJ102	Resistor, 1.0KΩ/0.25W	1	1
R19	ERDS2TJ102	Resistor, 1.0KΩ/0.25W	1	1
R20	ERDS2TJ102	Resistor, 1.0KΩ/0.25W	1	1
R21	ERDS2TJ102	Resistor, 1.0KΩ/0.25W	1	1
R22	ERDS2TJ102	Resistor, 1.0KΩ/0.25W	1	1
R23	ERDS2TJ102	Resistor, 1.0KΩ/0.25W	1	1
R24	ERDS2TJ102	Resistor, 1.0KΩ/0.25W	1	1
R25	ERDS2TJ102	Resistor, 330Ω/0.25W	1	1
R26	ERDS2TJ331	Resistor, 330Ω/0.25W	1	1
R27	ERDS2TJ331	Resistor, 330Ω/0.25W	1	1
R28	ERDS2TJ331	Resistor, 330Ω/0.25W	1	1
R29	ERDS2TJ331	Resistor, 330Ω/0.25W	1	1
R30	ERDS2TJ331	Resistor, 330Ω/0.25W	1	1
R31	ERDS2TJ331	Resistor, 330Ω/0.25W	1	1
R32	ERDS2TJ331	Resistor, 330Ω/0.25W	1	1
R33	ERDS2TJ331	Resistor, 330Ω/0.25W	1	1
R34	ERDS2TJ472	Resistor, 4.7KΩ/0.25W	0	1
R35	ERDS2TJ102	Resistor, 1.0KΩ/0.25W	1	1
R36	ERDS2TJ102	Resistor, 1.0KΩ/0.25W	1	1

Ref. No.	Part No.	Description	Models	
			UF-311	UF-312
R37	ERDS2TJ102	Resistor, 1.0KΩ/0.25W	1	1
R38	ERDS2TJ565	Resistor, 5.6MΩ/0.25W	1	1
R39	ERDS2TJ223	Resistor, 22KΩ/0.25W	1	1
R40	ERDS2TJ223	Resistor, 22KΩ/0.25W	1	1
R41	ERDS2TJ223	Resistor, 22KΩ/0.25W	1	1
C1	ECBA1H102KB5	Capacitor, 1000pF/50V	1	1
C2	ECBA1H102KB5	Capacitor, 1000pF/50V	1	1
C3	ECBA1H102KB5	Capacitor, 1000pF/50V	1	1
C4	ECBA1H102KB5	Capacitor, 1000pF/50V	1	1
C5	ECBA1H102KB5	Capacitor, 1000pF/50V	1	1
C6	ECBA1H102KB5	Capacitor, 1000pF/50V	1	1
C7	ECCZ1H220JC	Capacitor, 22pF/50V	1	1
C8	ECCZ1H220JC	Capacitor, 22pF/50V	1	1
C9	ECEA1CKS220	Capacitor, 22pF/16V	1	1
C10	ECEA1CKS220	Capacitor, 22pF/16V	1	1
C11	ECEA1CKS220	Capacitor, 22pF/16V	0	1
C12	306295F10425	Capacitor, 0.1μF/25V	0	1
C13	ECBA1H471KB5	Capacitor, 470pF/50V	0	1
C14	ECBA1H471KB5	Capacitor, 470pF/50V	0	1
C15	ECBA1H471KB5	Capacitor, 470pF/50V	0	1
C16	396295F10425	Capacitor, 0.1μF/25V	1	1
C17	396295F10425	Capacitor, 0.1μF/25V	1	1
SW1	SKHVBB	Switch	0	1
SW2	SKHVBB	Switch	0	1
SW3	SKHVBB	Switch	0	1
SW4	SKHVBB	Switch	0	1
SW5	SKHVBB	Switch	0	1
SW6	SKHVBB	Switch	0	1
SW7	SKHVBB	Switch	1	1
SW8	SKHVBB	Switch	1	1
SW9	SKHVBB	Switch	1	1
SW10	SKHVBB	Switch	1	1
SW11	SKHVBB	Switch	1	1
SW12	SKHVBB	Switch	1	1
SW13	SKHVBB	Switch	1	1
SW14	SKHVBB	Switch	1	1
SW15	SKHVBB	Switch	0	1
SW16	SKHVBB	Switch	0	1
SW17	SKHVBB	Switch	0	1
SW18	SKHVBB	Switch	0	1
SW19	SKHVBB	Switch	0	1
SW20	SKHVBB	Switch	0	1
SW21	SKHVBB	Switch	1	1
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SW24	SKHVBB	Switch	1	1
SW25	SKHVBB	Switch	1	1
SW26	SKHVBB	Switch	1	1
SW27	SKHVBB	Switch	1	1
SW28	SKHVBB	Switch	1	1
SW29	SKHVBB	Switch	1	1
SW30	SKHVBB	Switch	1	1
SW31	SKHVBB	Switch	1	1
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SW33	SKHVBB	Switch	1	1
SW34	SKHVBB	Switch	1	1
SW35	SKHVBB	Switch	1	1
SW36	SKHVBB	Switch	1	1
SW37	SKHVBB	Switch	1	1
SW38	SKHVBB	Switch	1	1
SW39	SKHVBB	Switch	1	1
SW40	SKHVBB	Switch	1	1
		Switch	1	1

Ref. No.	Part No.	Description	Models	
			UF-311	UF-312
SW41	SKHVBB	Switch	1	1
SW42	SKHVBB	Switch	1	1
SW43	SKHVBB	Switch	1	1
SW44	SKHVBB	Switch	1	1
SW45	SKHVBB	Switch	1	1
SW46	SKHVBB	Switch	1	1
SW47	SKHVBB	Switch	1	1
SW48	SKHVBB	Switch	1	1
SW49	SKHVBB	Switch	1	1
SW50	SKHVBB	Switch	1	1
SW51	SKHVBB	Switch	1	1
SW52	SKHVBB	Switch	1	1
SW53	SKHVBB	Switch	1	1
LCD1	DM2021	LCD	0	1
LCD2	EDD072KF5A4P	LCD	1	0
CN11	S13B-PH-K-S	Connector,13P	1	1
LJ1,2	14PFD4T1PKL1	Connector	0	1
JP1	Not Assigned	Jumper	1	0
JP2	Not Assigned	Jumper	1	0
JP3	Not Assigned	Jumper	1	0
JP4	Not Assigned	Jumper	1	0
JP5	Not Assigned	Jumper	1	0
JP6	Not Assigned	Jumper	1	0
JP7	Not Assigned	Jumper	1	0
JP8	Not Assigned	Jumper	1	0
JP9	Not Assigned	Jumper	0	1
JP10	Not Assigned	Jumper	0	1
JP11	Not Assigned	Jumper	0	1
JP12	Not Assigned	Jumper	0	1
JP13	Not Assigned	Jumper	0	1
JP14	Not Assigned	Jumper	0	1
JP15	Not Assigned	Jumper	0	1
JP16	Not Assigned	Jumper	0	1
JP17	Not Assigned	Jumper	1	0
JP18	Not Assigned	Jumper	1	1
JP19	Not Assigned	Jumper	1	1
JP20	Not Assigned	Jumper	0	0
JP21	Not Assigned	Jumper	1	0
JPA	Not Assigned	Jumper	1	1
JPB	Not Assigned	Jumper	1	1
JPC	Not Assigned	Jumper	1	1
JPD	Not Assigned	Jumper	1	1

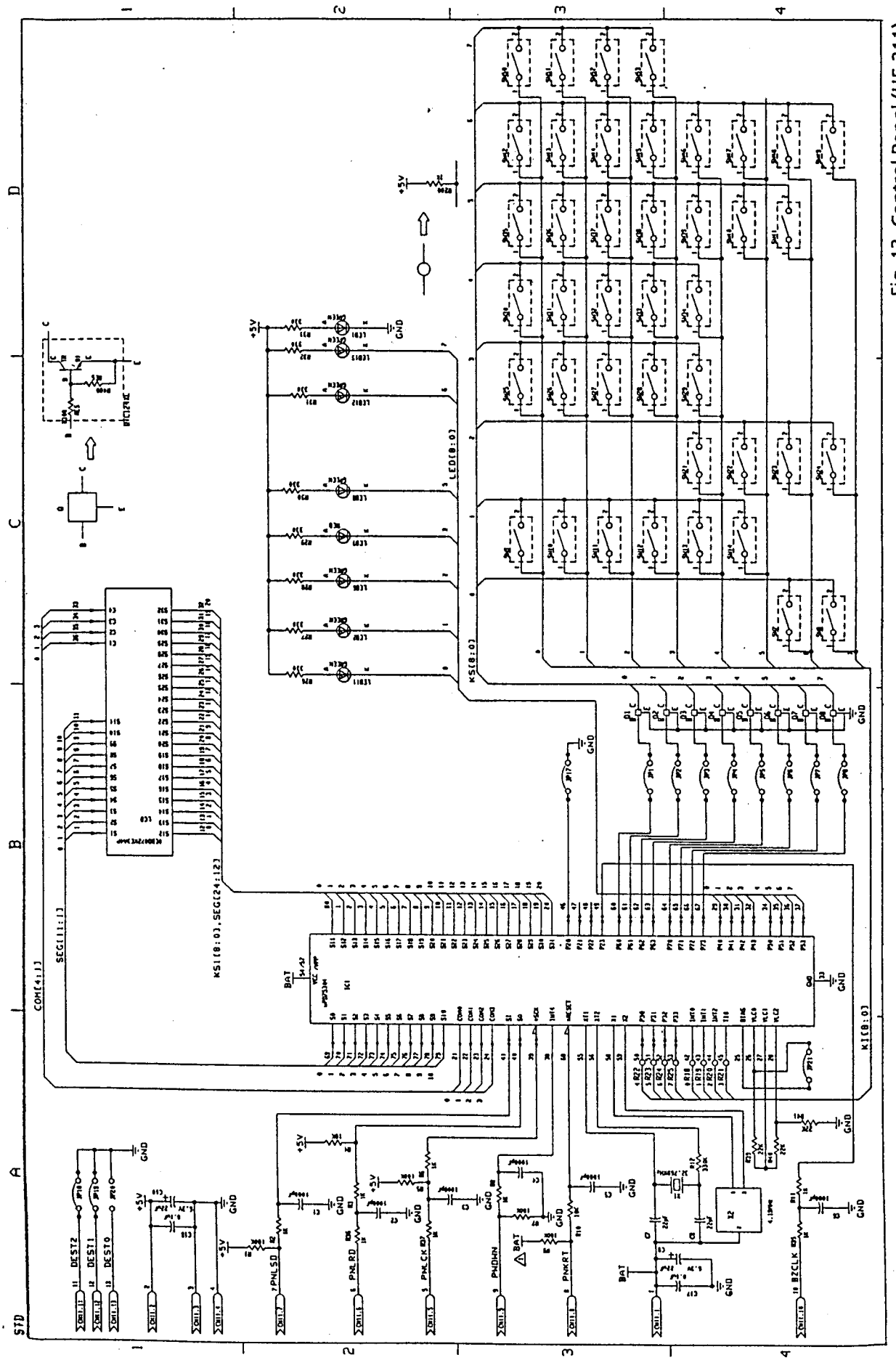


Fig. 13 Control Panel (UF-311)

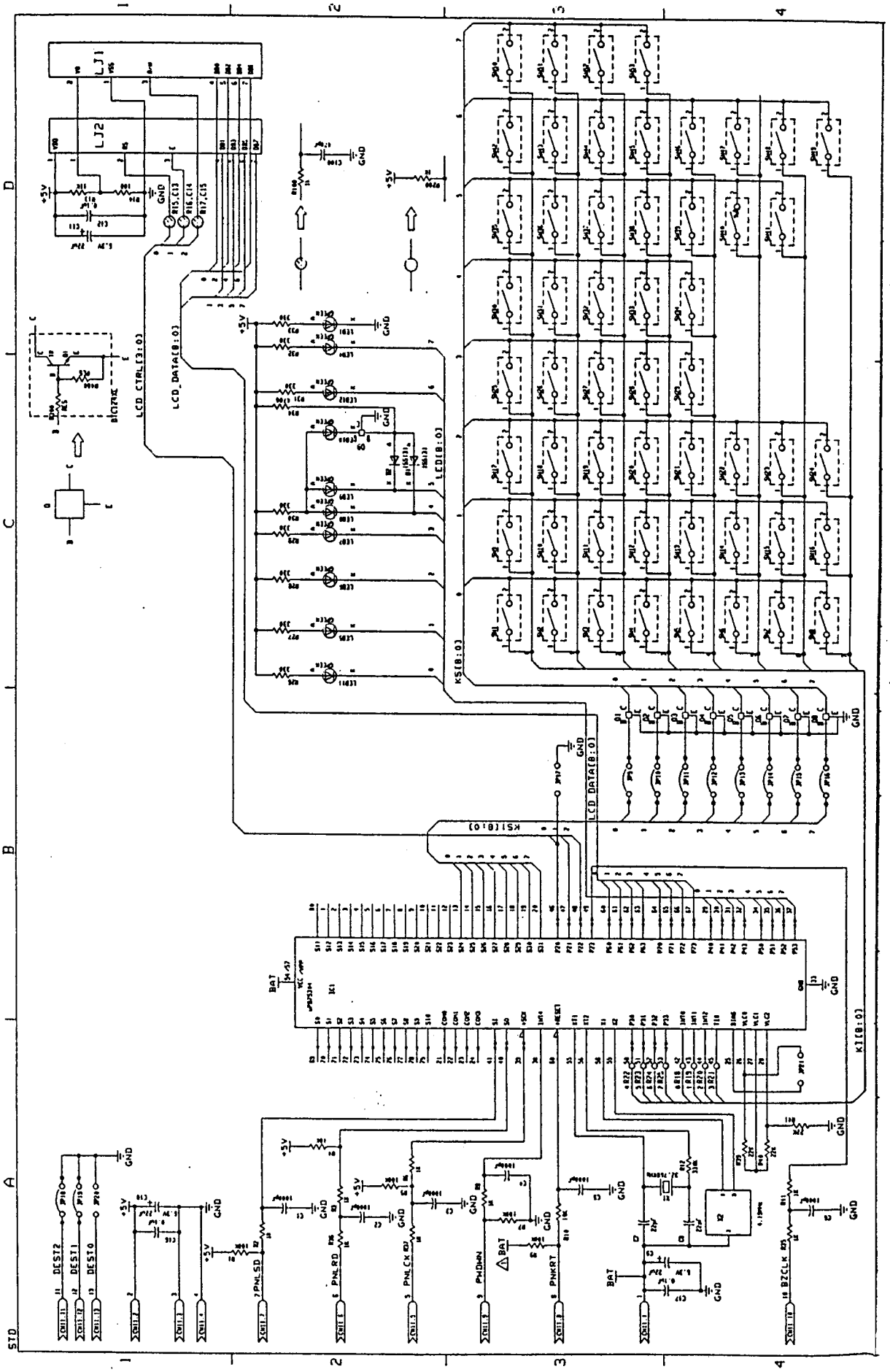


Fig. 14 Control Panel (UF-312)

7.6 Speech Circuit Board (SPC)

Mod.	Ref. No.	Part No.	Description
	IC1	LA8515	Integrated Circuit
	IC2	LA8501	Integrated Circuit
	ZD1	RD12F-T7	Zener Diode
	ZD2	RD27F19M	Zener Diode
	D1	1SR139-100	Diode
	D2	1SR139-100	Diode
	D3	1SR139-100	Diode
	D4	1SR139-100	Diode
	D5	1SR139-100	Diode
	D6	1SR139-100	Diode
	D7	1SR139-100	Diode
	D8	1SR139-100	Diode
	D9	1SR131-T77	Diode
	D10	1SR131-T77	Diode
	D11	1SR131-T77	Diode
	BZ1	PKM33EP-1001	Buzzer
	HSW1	SPPY12-W	Hook Switch
	SW2	SSSF113-L9	Switch
	L1	C11HS-1520R3	Inductor
	MJ4	HJCO23401012	Modular Jack
	CN19	DF1B8P2.5DSA	Connector,8P
	ZNR1	Not used	
	C1	GRM4B223K1HY	Capacitor, 0.022μF/50V
	C2	ECEA1CSS221	Capacitor, 220μF/16V
	C3	GRM4B103K1HY	Capacitor, 0.01μF/50V
	C4	Not used	
	C5	ECQV1H334JZ	Capacitor, 0.33μF/50V
	C6	GRM4C471K1HY	Capacitor, 470pF/50V
	C7	GRM4B562K1HY	Capacitor, 5600pF/50V
	C8	ECEA1CKA220	Capacitor, 22μF/16V
	C9	GRM4B223K1HY	Capacitor, 0.022μF/50V
	C10	GRM4B102K1HY	Capacitor, 1000pF/50V
	C11	GRM5B104K1HY	Capacitor, 0.1μF/50V
	C12	ECEA1CKA220	Capacitor, 22μF/16V
	C13	GRM4B102K1HY	Capacitor, 1000pF/50V
	C14	Not used	
	C15	GRM5B104K1HY	Capacitor, 0.1μF/50V
	C16	GRM4B223K1HY	Capacitor, 0.022μF/50V
	C17	ECEA1CKA100	Capacitor, 10μF/16V
	C18	ECQM2102KZ	Capacitor, 1000pF/200V
	C19	ECQE2105KF	Capacitor, 1.0μF/250V
	C20	ECEA1VKA220	Capacitor, 22μF/35V
	C21	ECQV1H474JZ	Capacitor, 0.47μF/50V
	C22	ECQB1H472JZ	Capacitor, 4700pF/50V
	J1	ERDS2TC0	Jumper
	J2	ERDS2TC0	Jumper
	J3	ERDS2TC0	Jumper
	J4	ERJ8GEY0R00	Jumper
	J5	ERJ8GEY0R00	Jumper
	J6	ERJ8GEY0R00	Jumper
	J7	ERJ8GEY0R00	Jumper

Mod.	Ref. No.	Part No.	Description
	R1	ERJ12YJ222	Resistor, 2.2KΩ/0.5W
	R2	ERJ6GEYJ154	Resistor, 150KΩ/0.1W
	R3	ERJ6GEYJ203	Resistor, 20KΩ/0.1W
	R4	ERJ6GEYJ184	Resistor, 180KΩ/0.1W
	R5	ERJ6GEYJ134	Resistor, 130KΩ/0.1W
	R6	ERJ12YJ102	Resistor, 1KΩ/0.5W
	R7	Not used	
	R8	ERJ6GEYJ391	Resistor, 390Ω/0.1W
	R9	ERJ6GEY0R00	Resistor, 0Ω/0.1W
	R10	ERJ12YJ100	Resistor, 10Ω/0.5W
	R11	ERJ6GEYJ113	Resistor, 11KΩ/0.1W
	R12	ERJ6GEYJ152	Resistor, 1.5KΩ/0.1W
	R13	ERJ6GEYJ622	Resistor, 6.2KΩ/0.1W
	R14	ERJ6GEYJ621	Resistor, 620Ω/0.1W
	R15	ERJ6GEYJ151	Resistor, 150Ω/0.1W
	R16	ERJ12YJ150	Resistor, 15Ω/0.5W
	R17	ERJ6GEYJ473	Resistor, 47KΩ/0.1W
	R18	ERJ12YJ270	Resistor, 27Ω/0.5W
	R19	ERJ6GEYJ332	Resistor, 3.3KΩ/0.1W
	R20	ERJ6GEYJ222	Resistor, 2.2KΩ/0.1W
	R21	ERJ6GEYJ153	Resistor, 15KΩ/0.1W
	R22	ERJ6GEYJ154	Resistor, 150KΩ/0.1W
	R23	ERJ6GEYJ622	Resistor, 6.2KΩ/0.1W
	R24	ERJ6GEYJ471	Resistor, 470Ω/0.1W
	R25	ERJ6GEYJ471	Resistor, 470Ω/0.1W
	R26	ERJ6GEYJ222	Resistor, 2.2KΩ/0.1W
	R27	ERJ6GEYJ222	Resistor, 2.2KΩ/0.1W
	R28	ERJ6GEYJ561	Resistor, 560Ω/0.1W
	R29	ERJ6GEYJ101	Resistor, 100Ω/0.1W

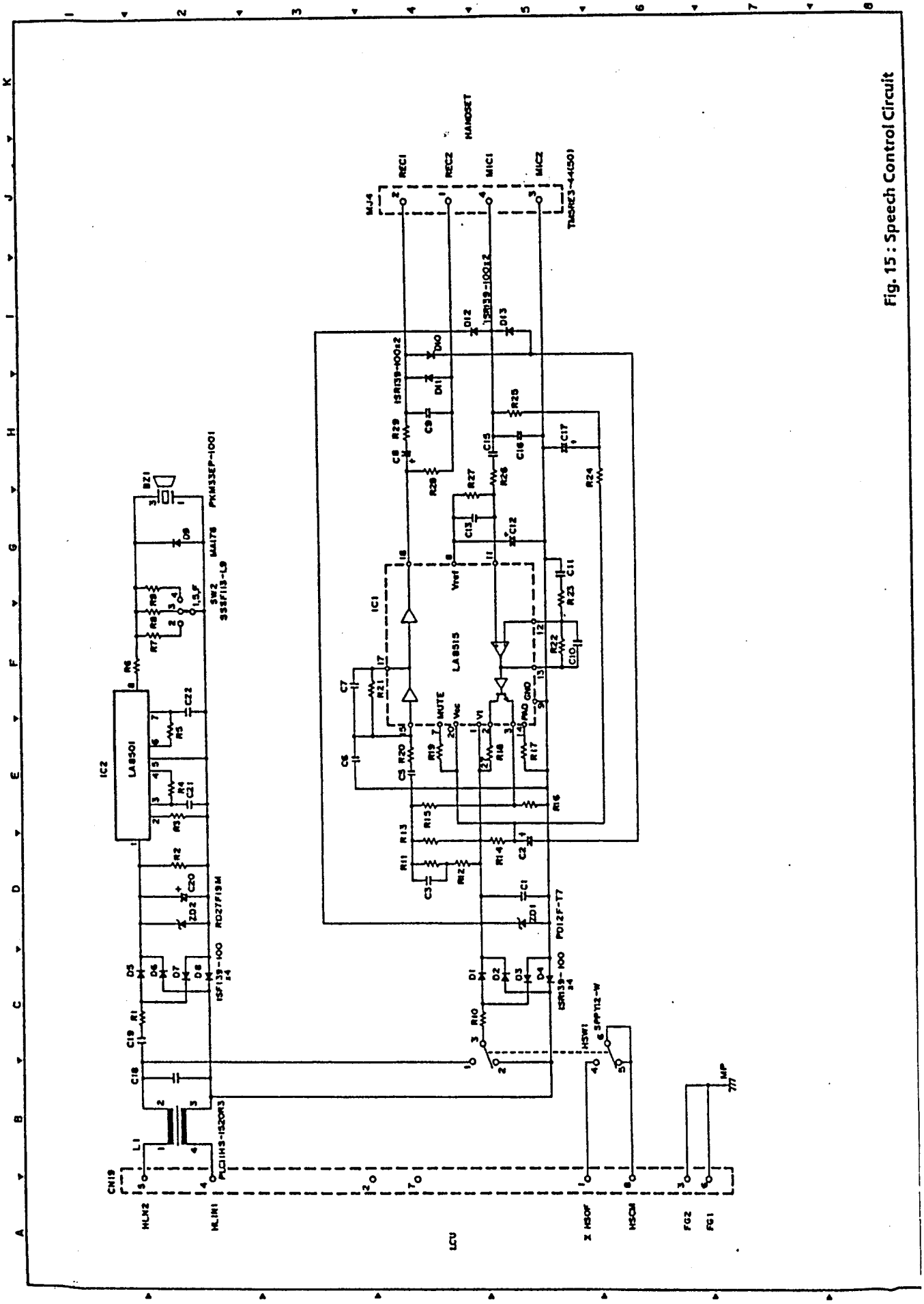


Fig. 15 : Speech Control Circuit

Fig. 16 Speech Circuit Board (SPC) / Components Loaded Side

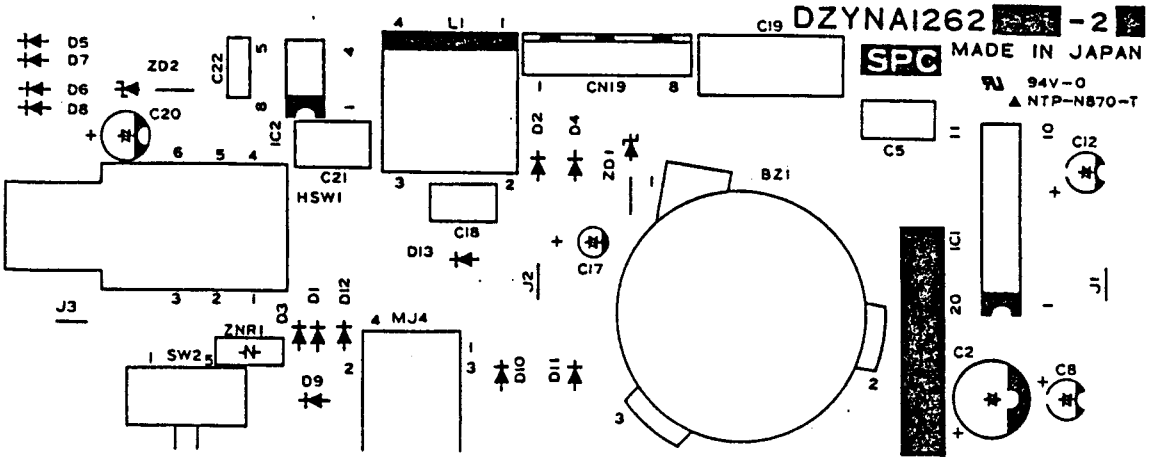
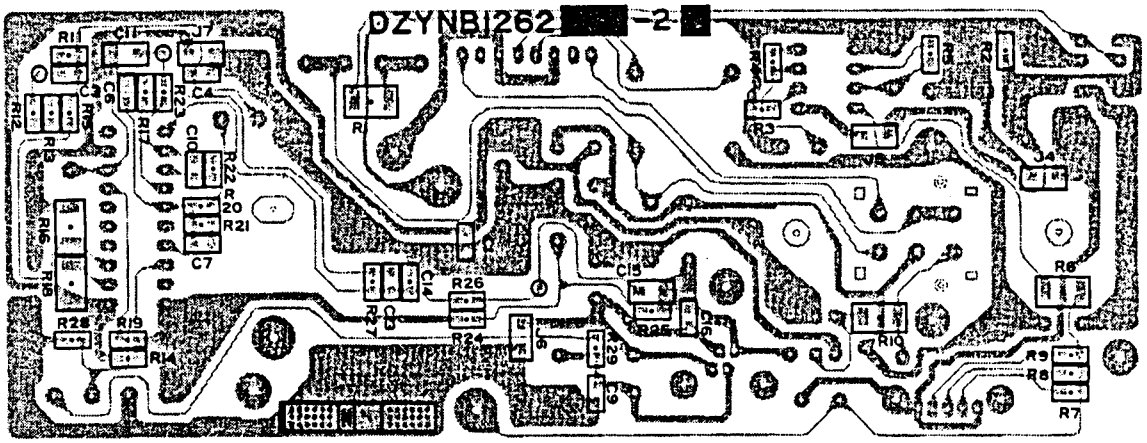


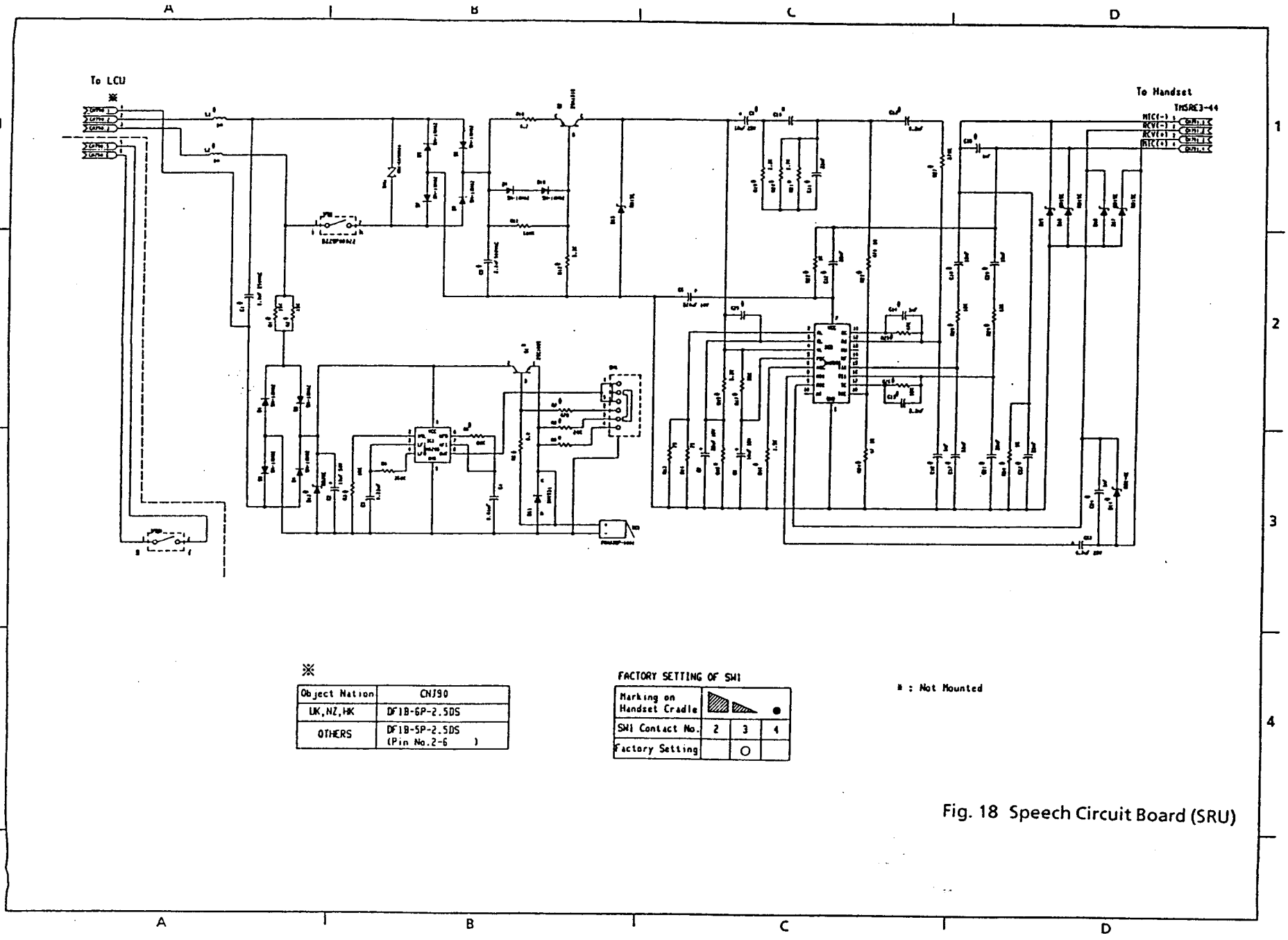
Fig. 17 Speech Circuit Board (SPC) / Soldering Side



7.7 Speech Circuit Board (SRU)

Mod.	Ref. No.	Part No.	Description
	IC1	BA8205	Integrated Circuit
	IC2	BA6566	Integrated Circuit
	ZNR1	NV082D07	Syrge Absorber
	D1	1SR139-200	Diode
	D2	1SR139-200	Diode
	D3	1SR139-200	Diode
	D4	1SR139-200	Diode
	D5	1SR139-200	Diode
	D6	1SR139-200	Diode
	D7	1SR139-200	Diode
	D8	1SR139-200	Diode
	D9	1SR139-200	Diode
	D10	1SR139-200	Diode
	D11	1N4531	Diode
	D12	MTZJ39A	Diode
	D13	MTZ15A	Diode
	D14	1N4531	Diode
	D15	MTZ15A	Diode
	D16	MTZ15A	Diode
	D17	MTZ15A	Diode
	D18	MTZ15A	Diode
	D19	1N4531	Diode
	HSW	DZZSP08022	Hook Switch
	SW1	SSSF113-L9	Switch
	L1	ELE-H101KA	Inductor
	L2	ELE-H101KA	Inductor
	BZ1	PKM33EP-1001	Ceramic Ringer
	CNJ90	DF1B5P2.5DS	Connector
	CNJ91	TM5RE3-44	Modular Jack
	Q1	Not used	
	Q2	2SA1319	Transistor
	C1	ECQE2105KF	Capacitor, 1μF/250V
	C2	ECEA1HKA100	Capacitor, 10μF/50V
	C3	ECQB1H224KF	Capacitor, 0.22μF/50V
	C4	ECQB1H103JF	Capacitor, 0.01μF/50V
	C5	ECQE2103KF	Capacitor, 0.01μF/250V
	C6	ECEA1AKS221	Capacitor, 220μF/10V
	C7	ECEA1CKA220	Capacitor, 22μF/16V
	C8	ECEA1CKA100	Capacitor, 10μF/16V
	C9	ECEA1EK100	Capacitor, 10μF/V25
	C10	Not used	
	C11	ECQB1H223JF	Capacitor, 0.022μF/50V
	C12	ECQB1H223JF	Capacitor, 0.022μF/50V
	C13	ECQB1H332JF	Capacitor, 3300pF/50V
	C14	ECQB1H102JF	Capacitor, 1000pF/50V
	C15	ECQB1H102KB	Capacitor, 1000pF/50V
	C16	ECBT1H102KB	Capacitor, 1000pF/50V
	C17	ECQB1H333JF	Capacitor, 0.033μF/50V
	C18	ECQB1H223JF	Capacitor, 0.022μF/50V
	C19	ECBT1H102KB	Capacitor, 1000pF/50V
	C20	ECQB1H223JF	Capacitor, 0.022μF/50V
	C21	ECQB1H333JF	Capacitor, 0.033μF/50V
	C22	ECQB1H223JF	Capacitor, 0.022μF/50V
	C23	ECEA1EKA4R7B	Capacitor, 4.7μF/25V
	C24	Not used	
	C25	ECQV1H563JZ	Capacitor, 0.12μF/50V

Mod.	Ref. No.	Part No.	Description
	R1	ERSD2TJ153	Resistor, 15KΩ/0.25W
	R2	ERSD2TJ153	Resistor, 15KΩ/0.25W
	R3	ERSD2TJ113	Resistor, 11KΩ/0.25W
	R4	ERSD2TJ364	Resistor, 300KΩ/0.25W
	R5	ERSD2TJ683	Resistor, 68KΩ/0.25W
	R6	ERSD2T0T	Resistor, 0Ω/0.25W
	R7	ERSD2TJ471	Resistor, 470Ω/0.25W
	R8	ERSD2TJ203	Resistor, 20KΩ/0.25W
	R9	Not used	
	R10	ERSD2TJ3R3	Resistor, 3.3Ω/0.25W
	R11	ERSD2TJ104	Resistor, 100KΩ/0.25W
	R12	ERSD2TJ332	Resistor, 3.3KΩ/0.25W
	R13	ERSD2TJ750	Resistor, 75Ω/0.25W
	R14	ERSD2TJ750	Resistor, 75Ω/0.25W
	R15	Not used	
	R16	ERSD2TJ272	Resistor, 2.7KΩ/0.25W
	R17	ERSD2TJ363	Resistor, 36KΩ/0.25W
	R18	ERSD2TJ331	Resistor, 330Ω/0.25W
	R19	ERSD2TJ122	Resistor, 1.2KΩ/0.25W
	R20	ERSD2TJ512	Resistor, 5.1KΩ/0.25W
	R21	Not used	
	R22	ERSD2TJ102	Resistor, 1KΩ/0.25W
	R23	EROS2TKF1501	Resistor, 1.5KΩ/0.25W
	R24	EROS2TKF1500	Resistor, 150Ω/0.25W
	R25	ERSD2TJ473	Resistor, 47KΩ/0.25W
	R26	ERSD2TJ183	Resistor, 18KΩ/0.25W
	R27	ERSD2TJ564	Resistor, 560KΩ/0.25W
	R28	ERSD2TJ562	Resistor, 5.6KΩ/0.25W
	R29	ERSD2TJ562	Resistor, 5.6KΩ/0.25W
	R30	ERSD2TJ102	Resistor, 1KΩ/0.25W



※

Object Nation	CNJ90
UK,NZ,HK	DF1B-6P-2.5DS
OTHERS	DF1B-5P-2.5DS (Pin No.2-6)

FACTORY SETTING OF SW1

Marking on Handset Cradle			
SW1 Contact No.	2	3	4
Factory Setting		O	

※ : Not Mounted

Fig. 18 Speech Circuit Board (SRU)

Fig. 19 Speech Circuit Board (SRU) / Component Loaded Side

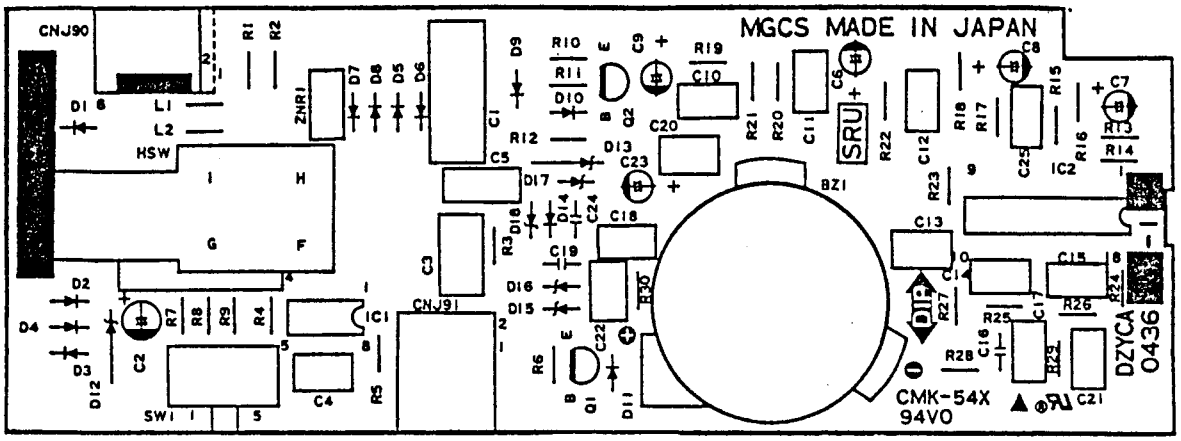
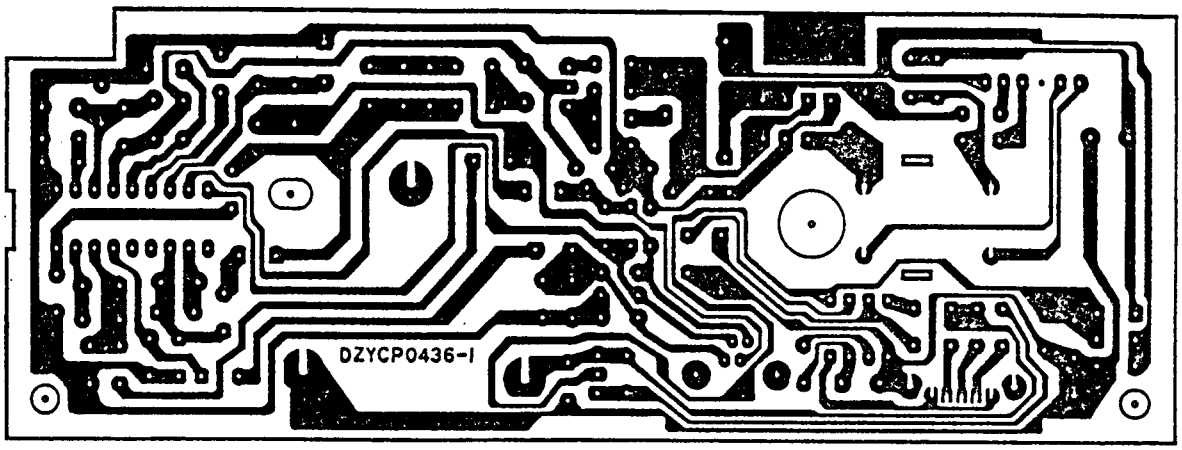


Fig. 20 Speech Circuit Board (SRU) / Soldering Side



7.8 Charge Coupled Devices (CCD)

Ref. No.	Part No.	Description	Models	
			UF-311	UF-312
IC1	μPD3732D	Intergrated Circuit	1	0
IC1	μPD3734D	Intergrated Circuit	0	1
Q1	DTA114ES	Transistor	1	1
R1	ERDS2TJ560	Resistor, 56Ω/0.25W	1	1
R2	ERDS2TJ222	Resistor, 2.2KΩ/0.25W	1	1
R3	ERDS2TJ101	Resistor, 100Ω/0.25W	1	1
R4	ERDS2TJ330	Resistor, 33Ω/0.25W	1	1
R5	ERDS2TJ330	Resistor, 33Ω/0.25W	1	1
R6	ERDS2TJ330	Resistor, 33Ω/0.25W	1	1
R7	ERDS2TJ330	Resistor, 33Ω/0.25W	1	1
R8	ERDS2TJ330	Resistor, 33Ω/0.25W	1	1
R9	ERDS2TJ330	Resistor, 33Ω/0.25W	1	1
R10	ERDS2TJ101	Resistor, 100Ω/0.25W	1	1
C1	ECEA1EKA100	Capacitor, 10μF/25V	1	1
C2	ECBA1H222KB5	Capacitor, 2200pF/50V	1	1
CN12	B10S-PH-K-S	Connector,10P	1	1

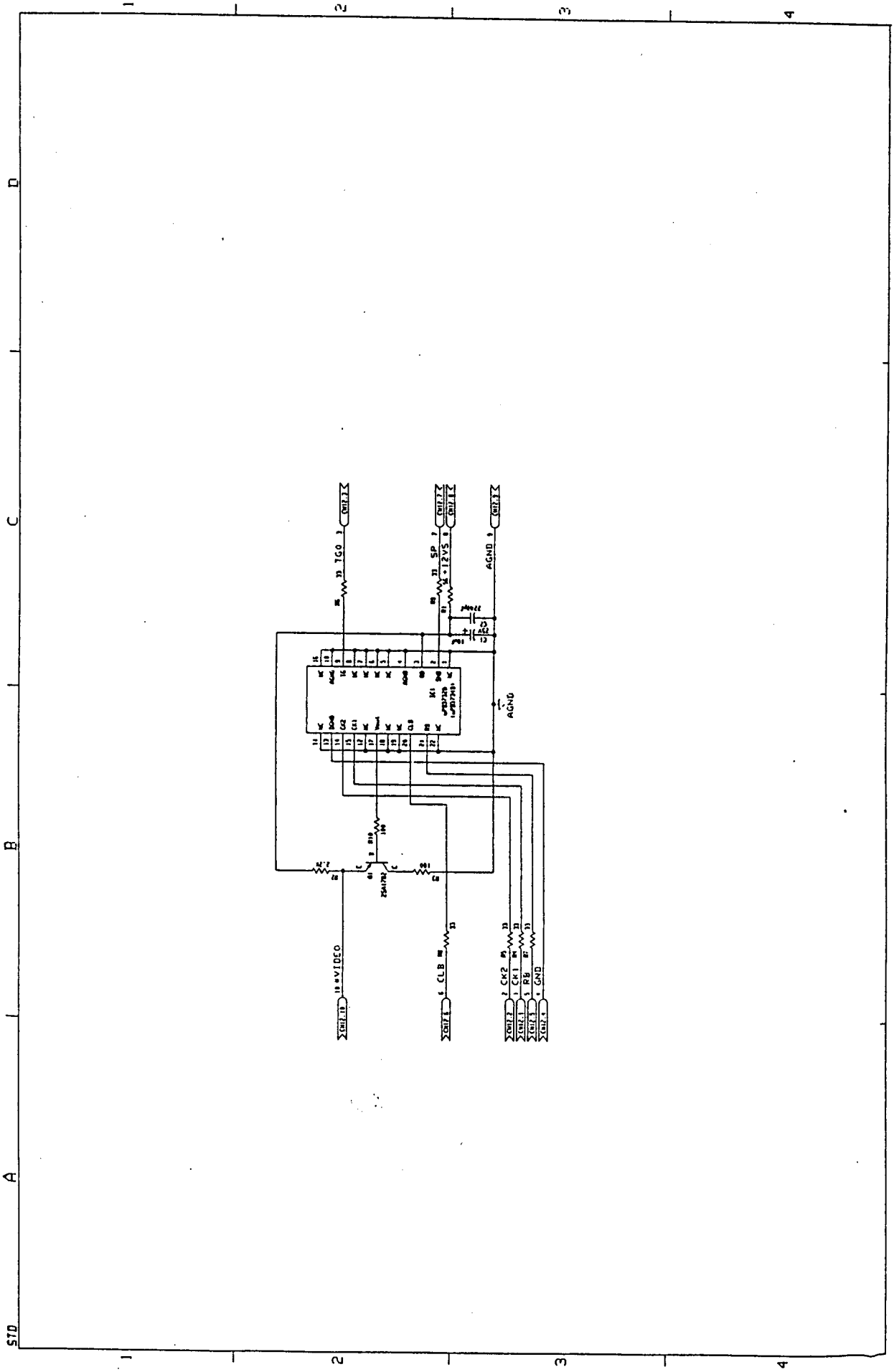


Fig. 21 Charge Coupled Devices (CCD)

7.9 Sensor Board (SNS)

Mod.	Ref. No.	Part No.	Description
	PC1	EE-SA102	Photo Coupler (DRS)
	PC1	EE-SA102	Photo Coupler (APS)
	PC1	EE-SA102	Photo Coupler (BPS)
	PC2	EE-SA102	Photo Coupler (DRS)
	JA1,2	DZACJ8705	Connector Cord
	JB1,2	DZACJ8706	Connector Cord
	CN13	DZACJ8704	Connector with Lead Wire,9P
	CN14	B2B-PH-K-M	Connector ,2P
	CN15	B2B-PH-K-S	Connector,2P

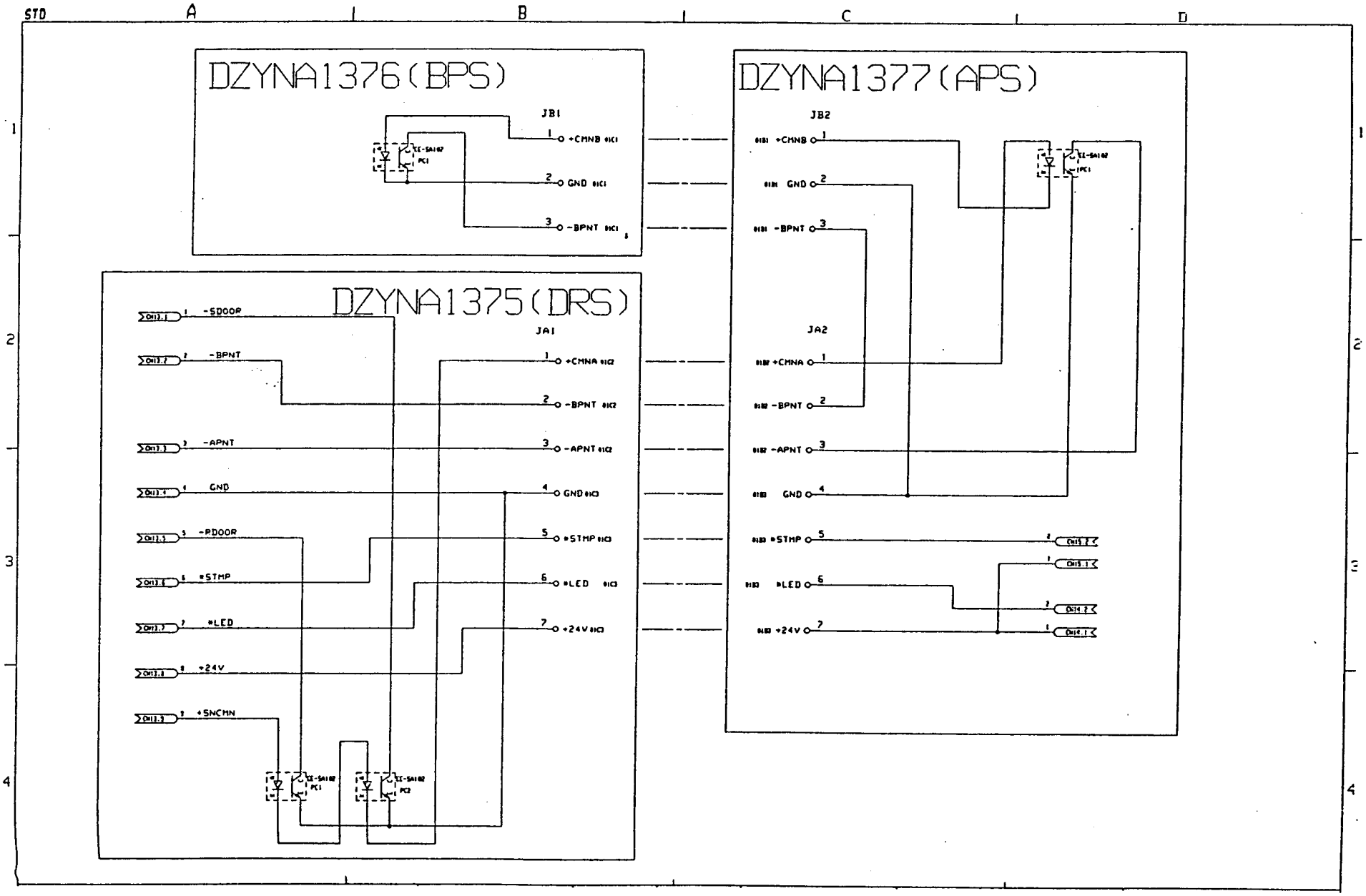


Fig. 22 Sensor Board (SNS)

7.10 Power Supply Unit (200 V version)

Ref. No.	Part No.	Description
F1	3479889	Fuse, 2A/250V
(F1)	3545641	Fuse Holder
CN1	3397858	Connector
CN2	3307565	
CN3	3479358	
T1	3480984	Transformer
L1	3480151	Reactor
RC1	3148742	Rectifer
RC51	3247783	
RC52	3222209	
RC53	3199827	
D1	3481093	Diode
D2	3481093	
D3	3319431	
D4	3413926	
D51	3434958	
D52	3434958	
PC1	3460010	Photo Coupler
Z1	3478386	Integrated Circuit
Z51	3385256	
Z52	3478920	
R1	3097269	Resistor, 680KΩ/0.25W
R2	3563855	Resistor, 100KΩ/3W
R3	3563324	Resistor, 100Ω/2W
R4	3479870	Resistor, 0.68Ω/2W
R6	3563685	Resistor, 100Ω/3W
R7	3415627	Resistor, 2.7KΩ/0.25W
R8	3415732	Resistor, 12KΩ/0.25W
R9	3415430	Resistor, 100Ω/0.25W
R10	3563278	Resistor, 15Ω/2W
R11	3276961	Resistor, 1Ω/0.25W
R12	3252450	Resistor, 330KΩ/2W
R14	3415635	Resistor, 3.3KΩ/0.25W
R51	3563383	Resistor, 680Ω/2W
R52	3415600	Resistor, 1.8KΩ/0.25W
R53	3415570	Resistor, 1KΩ/0.25W
R54	3415570	Resistor, 1KΩ/0.25W
R55	3415473	Resistor, 220Ω/0.25W
R56	3276961	Resistor, 1Ω/0.25W
R57	3276961	Resistor, 1Ω/0.25W
RX1	3415589	Resistor, 1.2KΩ/0.25W
C1	3596907	Capacitor, 0.33μF/250V
C2	3587320	Capacitor, 0.1μF/250V
C3	3370755	Capacitor, 2200pF/ 400/250/125V
C4	3370755	Capacitor, 2200pF/ 400/250/125V
C5	3370755	Capacitor, 2200pF/ 400/250/125V
C7	3480216	Capacitor, 56μF/V400
C8	3611353	Capacitor, 0.01μF/630V
C10	3515540	Capacitor, 220pF/2KV
C11	3480496	Capacitor, 0.047μF/50V
C12	3480836	Capacitor, 180μF/35V
C13	3480844	Capacitor, 68μF/63V
C51	3515524	Capacitor, 2200pF/1kV
C53	3480887	Capacitor, 0.1μF/50V
C54	3480909	Capacitor, 560μF/25V
C55	3480887	Capacitor, 0.1μF/50V
C56	3480917	Capacitor, 220μF/25V
C58	3480917	Capacitor, 220μF/25V
CX1	3480887	Capacitor, 0.1μF/50V
NR1	3469050	Surge Absorber
TH1	3207579	Thermistor

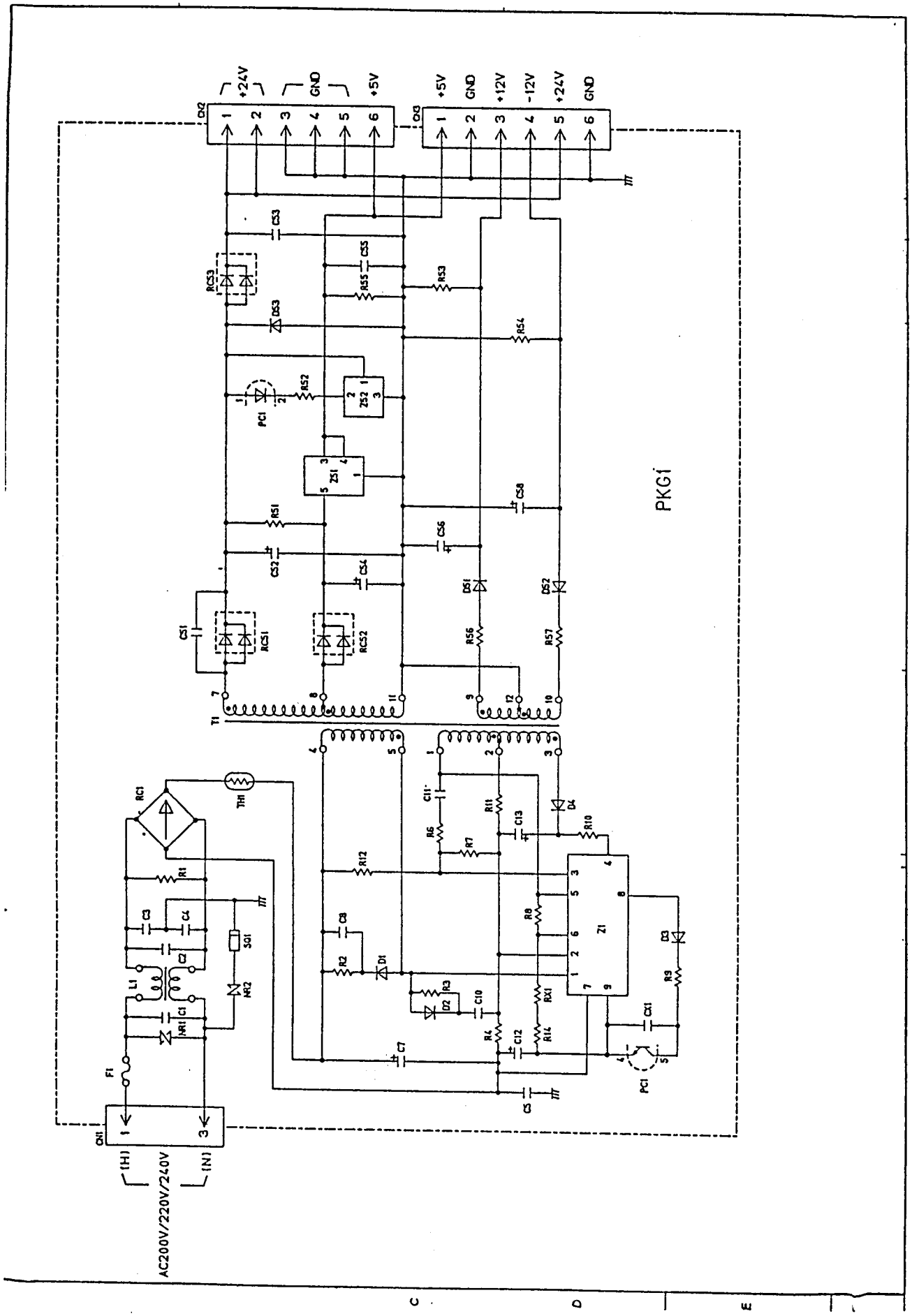


Fig. 23 Power Supply Unit (200V version)

Chapter 8
Exploded View & Parts List
(UF-311)

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NOTE: The contents in this parts list cover the following countries.

No.	Country Code	Country	No.	Country Code	Country
1	AB	U.K.	15	AN	Norway
2	AL	Australia	16	AA	Austria
3	AG	Germany	17	AQ	Ireland
4	AK	Hong Kong	18	AP	Portugal
5	AH	The Netherlands	19	AE	Taiwan
6	AS	Sweden	20	YX	Singapore
7	AI	Italy	21	YZ	Universal (200V)
8	AW	New Zealand	22	YG	Greece
9	AR	Belguim	23	YM	Malaysia
10	AM	Switherland	24	YT	Thailand
11	AT	Turkey	25	YS	Saudi Arabia
12	AJ	Spain	26	YW	South Africa
13	AD	Denmark	27	YB	Barclay
14	AF	Finland			

8.1 Cover Ass'y (1) (Fig. 1) / UF-311

Ref. No.	Part No.	Description	AB	AL	AG	AK	AH	AS	AI	AW	AR	AM	AT	AJ	AD	AF	AN	AA	AQ	AP	AE	YX	YZ	YG	YM	YT	YS	YW	YB	Location
101	DZACJ0021ABL	Cover Ass'y, Control Panel	1	1	--	1	1	--	--	1	1	1	1	--	--	--	--	--	1	--	1	1	1	1	1	1	1	1	1	I3
	DZACJ0021AGL		--	--	1	--	--	--	--	--	--	--	--	--	--	--	--	1	--	--	--	--	--	--	--	--	--	--	--	
	DZACJ0021ASL		--	--	--	--	--	1	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
	DZACJ0021AIL		--	--	--	--	--	--	1	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
	DZACJ0021AJL		--	--	--	--	--	--	--	--	--	--	--	1	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
	DZACJ0021ADL		--	--	--	--	--	--	--	--	--	--	--	--	1	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
	DZACJ0021AFL		--	--	--	--	--	--	--	--	--	--	--	--	--	1	--	--	--	--	--	--	--	--	--	--	--	--	--	
	DZACJ0021ANL		--	--	--	--	--	--	--	--	--	--	--	--	--	--	1	--	--	--	--	--	--	--	--	--	--	--	--	
	DZACJ0021APL		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	1	--	--	--	--	--	--	--	--	--	
102	DZACJ8615AB	Sheet, Panel	1	1	--	1	1	--	--	1	1	1	1	--	--	--	--	--	1	--	1	1	1	1	1	1	1	1	1	E1
	DZACJ8615AG		--	--	1	--	--	--	--	--	--	--	--	--	--	--	--	1	--	--	--	--	--	--	--	--	--	--	--	
	DZACJ8615AS		--	--	--	--	--	1	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
	DZACJ8615AI		--	--	--	--	--	--	1	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
	DZACJ8615AJ		--	--	--	--	--	--	--	--	--	--	--	1	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
	DZACJ8615AD		--	--	--	--	--	--	--	--	--	--	--	--	1	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
	DZACJ8615AF		--	--	--	--	--	--	--	--	--	--	--	--	--	1	--	--	--	--	--	--	--	--	--	--	--	--	--	
	DZACJ8615AN		--	--	--	--	--	--	--	--	--	--	--	--	--	--	1	--	--	--	--	--	--	--	--	--	--	--	--	
	DZACJ8615AP		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	1	--	--	--	--	--	--	--	--	--	
103	DZACJ8613AU	Plate, Panel	1	1	--	1	1	--	--	1	1	1	1	--	--	--	--	--	1	--	1	1	1	1	1	1	1	1	1	E2
	DZACJ8613AG		--	--	1	--	--	--	--	--	--	--	--	--	--	--	--	1	--	--	--	--	--	--	--	--	--	--	--	
	DZACJ8613AS		--	--	--	--	--	1	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
	DZACJ8613AI		--	--	--	--	--	--	1	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
	DZACJ8613AJ		--	--	--	--	--	--	--	--	--	--	--	1	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
	DZACJ8613AD		--	--	--	--	--	--	--	--	--	--	--	--	1	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
	DZACJ8613AF		--	--	--	--	--	--	--	--	--	--	--	--	--	1	--	--	--	--	--	--	--	--	--	--	--	--	--	
	DZACJ8613AN		--	--	--	--	--	--	--	--	--	--	--	--	--	--	1	--	--	--	--	--	--	--	--	--	--	--	--	
	DZACJ8613AP		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	1	--	--	--	--	--	--	--	--	--	
104	DZACJ8616	Sheet, One-Touch Key	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	B2

8.1 Cover Ass'y (1) (Fig. 1) / UF-311

Ref. No.	Part No.	Description	AB	AL	AG	AK	AH	AS	AI	AW	AR	AM	AT	AJ	AD	AF	AN	AA	AQ	AP	AE	YX	TZ	YG	YM	YT	YS	YW	YB	Location
106	DZACJ8619AB	Sheet, Station	1	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	B1
	DZACJ8619AG		--	--	1	--	--	--	--	--	--	--	--	--	--	--	--	1	--	--	--	--	--	--	--	--	--	--	--	
	DZACJ8619AS		--	--	--	--	--	1	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
	DZACJ8619AI		--	--	--	--	--	--	1	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
	DZACJ8619AJ		--	--	--	--	--	--	--	--	--	--	--	1	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
	DZACJ8619AD		--	--	--	--	--	--	--	--	--	--	--	--	1	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
	DZACJ8619AF		--	--	--	--	--	--	--	--	--	--	--	--	--	1	--	--	--	--	--	--	--	--	--	--	--	--	--	
	DZACJ8619AN		--	--	--	--	--	--	--	--	--	--	--	--	--	--	1	--	--	--	--	--	--	--	--	--	--	--	--	
	DZACJ8619AP		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	1	--	--	--	--	--	--	--	--	--	
	DZACJ8619AC		--	1	--	1	1	--	--	1	1	1	1	--	--	--	--	--	1	--	1	1	1	1	1	1	1	1	1	
107	DZACJ8602	Cover, Directory Sheet	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	B1
108	DZACH8666	Sub-Tray, Document Return	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	A5
109	DZACH8665	Tray, Document Return	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	B3
110	DZACH8664Y5	Tray, Paper Exit	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	B7
111	DZACH8633Y5	Wing, Left	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	C5
112	DZACH8632Y5	Wing, Right	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	C6
113	DZACH8571Y5	Tray Ass'y, Paper Exit	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	C8
114	DZYNA1380	PC Board w/ component, PNL	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	D7
115	DZACJ8614	Plate, Grounding, Panel	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	G5
116	DZACJ8701	Connector Cord w/plug, PNL	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	G7
117	DZACJ8608	Key 1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	E6
118	DZACJ8609	Key 2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	F5
119	DZACJ8610	Key 3	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	E6
120	DZACJ8603	Key 4	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	G6
121	DZACJ8605	Key 5	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	G6
122	DZACJ8606A	Key 6	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	G6
123	DZACJ8606B	Key 7	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	G6
124	DZACJ8604	Key 8	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	G7
125	DZACJ8621	Sheet, Dust Protection	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	G7

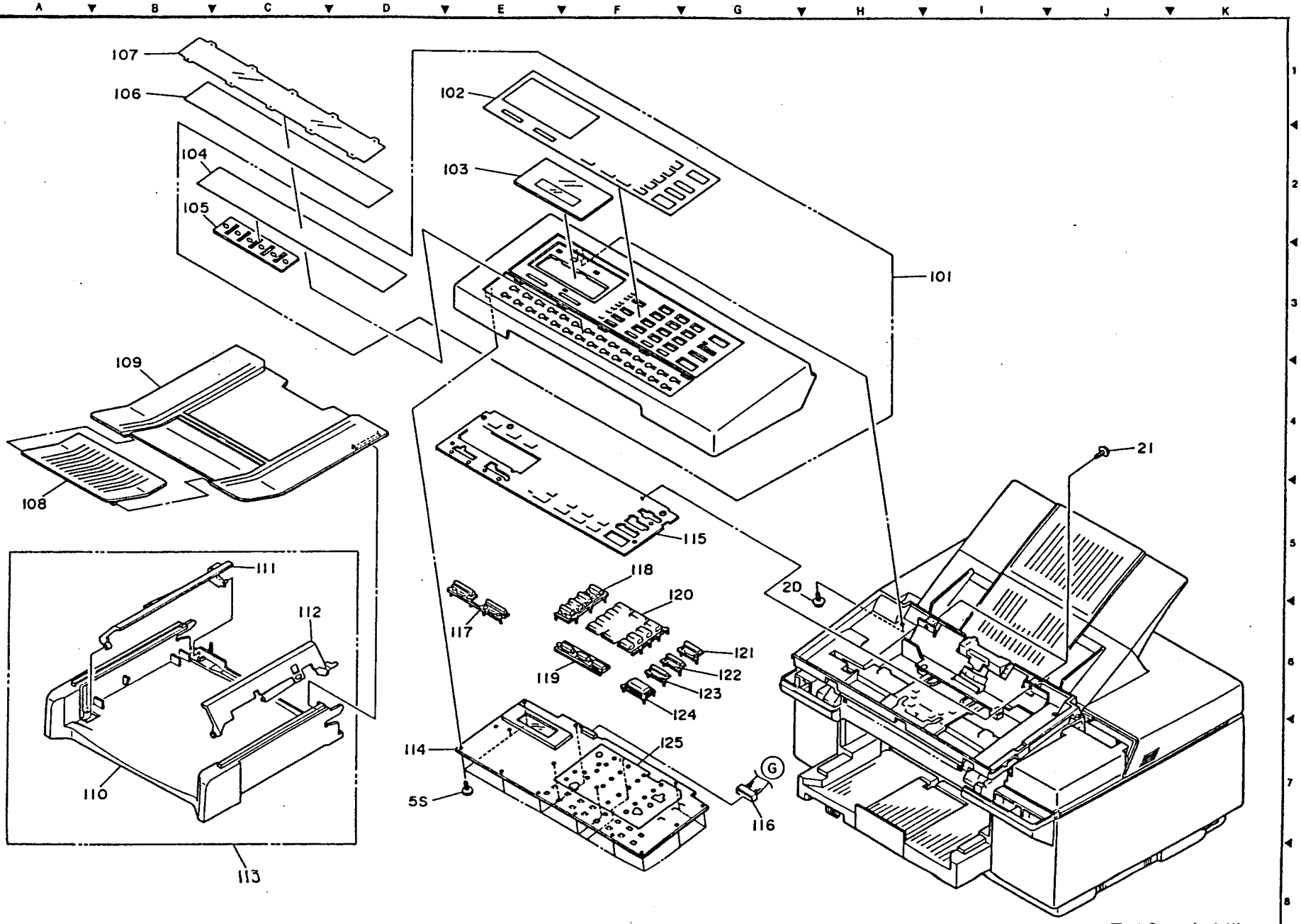


Fig.1:Cover Ass'y(1)

8.2 Cover Ass'y (2) (Fig. 2) / UF-311

Ref. No.	Part No.	Description	Location
201	DZACH8656Y5	Guide, Sub-Tray, Document	K1
202	DZACH8655Y5	Sub-Tray, Document	K2
203	DZACJ8503	Tray Ass'y, Document	H1
204	DZACH8674AU1	Cover, Document Guide	E2
205	DZACH8676AU	Guide, Document, Left	E2
206	DZACH8675AU	Guide, Document, Right	G2
207	BC8246	Gear, Document Guide	F3
208	Not used		
209	DZACH8901AB	Label, Replacement, Ink Cartridge	J5
210	DZACJ8501	Projection-cover, Left, Upper	F6
211	DZACJ8502	Projection-cover, Right, Upper	H7
212	DZACH8309	Plate Spring, Projection-cover	G6, H7
213	DZACH8301	Isolator	I7
214	DZACH8657Y5	Cover, Top	K5
215	DZACH8570Y5	Paper Tray Extender Ass'y	C7
216	DZACH8305	Plate Spring, Paper Catch	B7
217	DZACH8662Y51	Cover, Front	C7
218	BC8234E2	Piece, Blind	G5

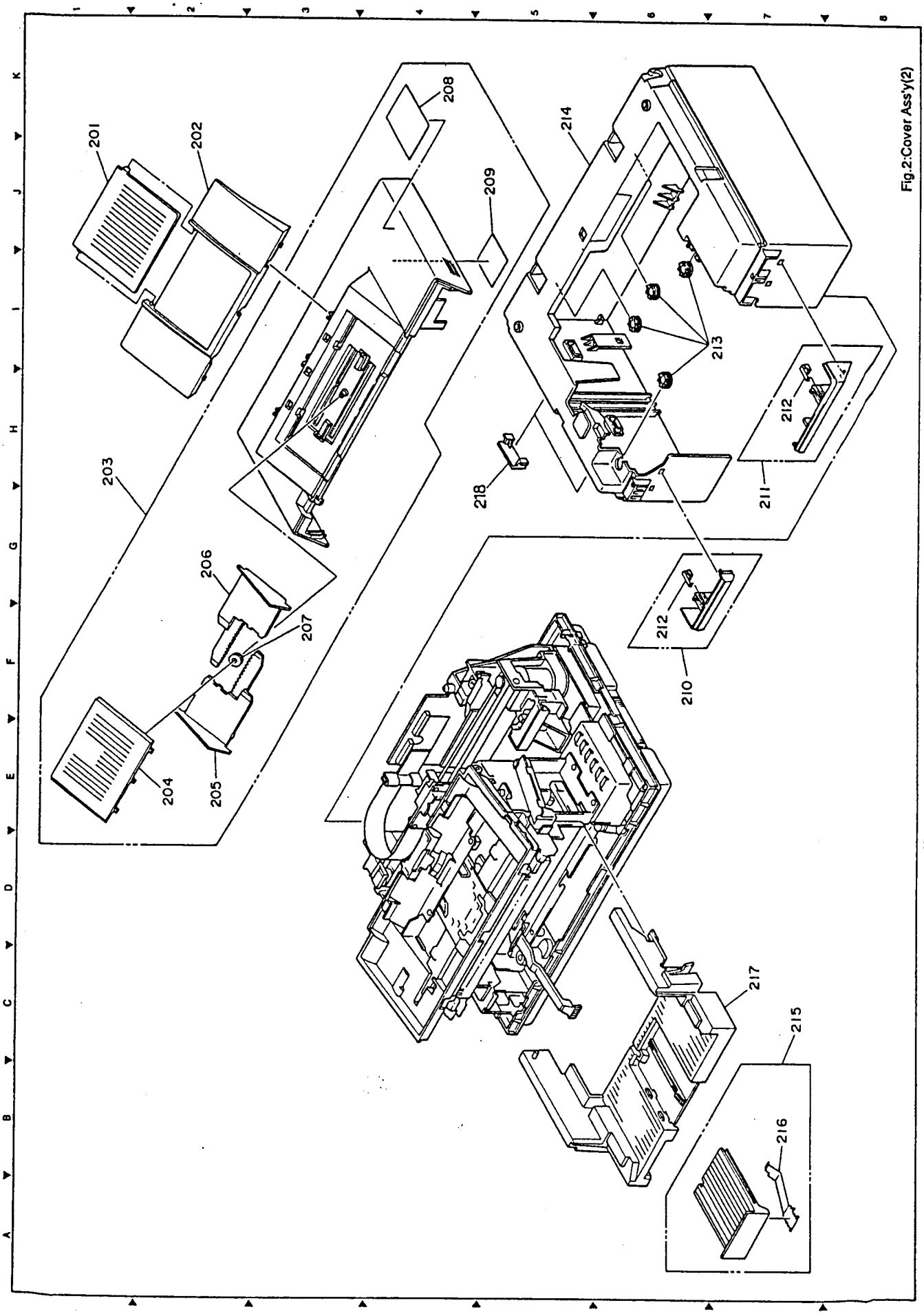


Fig.2:Cover Ass'y(2)

8.3 Base Ass'y (Fig. 3) / UF-311

Ref. No.	Part No.	Description	AB	AL	AG	AK	AH	AS	AI	AW	AR	AM	AT	AJ	AD	AF	AN	AA	AQ	AP	AE	YX	YZ	YG	YM	YT	YS	YW	YB	Location
301	DZACJ8505	Cover Ass'y, Base	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	A7
302	DZACH8302	Leg, Rubber	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	B7
303	DZACJ8203	Panel, Side	1	1	--	1	--	--	--	1	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	B4
	DZACH8208AB		--	--	1	--	1	1	1	--	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
304	DZACH8204	Lever A, Switch	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	B5
305	DZACH8209AB	Cover, Modular	1	--	1	1	--	1	--	1	1	1	--	--	--	1	1	1	1	1	--	--	--	--	--	--	--	--	--	C5
	DZACH8203		--	1	--	--	1	--	1	--	--	--	1	1	1	--	--	--	--	--	1	1	1	1	1	1	1	1	1	
306	DZACJ8211	Bracket, Shield	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	F6
307	DZACJ8201	Holder, Speaker	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	A3
308	DZACJ8803	Speaker	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	B3
309	DZACJ8214	Bracket, TX Chassis	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	D2
310	DZYNA1379B	PC Board w/component, LCE	1	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	E3
	DZYNA1379L1		--	1	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
	DZYNA1379G1		--	--	1	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
	DZYNA1379K		--	--	--	1	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
	DZYNA1379H1		--	--	--	--	1	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
	DZYNA1379S1		--	--	--	--	--	1	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
	DZYNA1379I1		--	--	--	--	--	--	1	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
	DZYNA1379W		--	--	--	--	--	--	--	1	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
	DZYNA1379R1		--	--	--	--	--	--	--	--	1	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
	DZYNA1379M1		--	--	--	--	--	--	--	--	--	1	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
	DZYNA1379T1		--	--	--	--	--	--	--	--	--	--	1	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
	DZYNA1379J1		--	--	--	--	--	--	--	--	--	--	--	1	--	--	--	--	--	--	--	--	--	--	--	--	--	--	1	
	DZYNA1379D1		--	--	--	--	--	--	--	--	--	--	--	--	1	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
	DZYNA1379F1		--	--	--	--	--	--	--	--	--	--	--	--	--	1	--	--	--	--	--	--	--	--	--	--	--	--	--	
	DZYNA1379N1		--	--	--	--	--	--	--	--	--	--	--	--	--	--	1	--	--	--	--	--	--	--	--	--	--	--	--	
	DZYNA1379A1		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	1	--	--	--	--	--	--	--	--	--	--	--	
	DZYNA1379Q1		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	1	--	--	--	--	--	--	--	--	--	--	
	DZYNA1379P1		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	1	--	--	--	--	--	--	--	--	--	
	DZYNA1379E1		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	1	--	--	--	--	--	--	--	--	
	DZYNA1373A1		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	1	1	1	1	1	1	--	--	
	DZYNA1373V1		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	1	--	

8.3 Base Ass'y (Fig. 3) / UF-311

Ref. No.	Part No.	Description	AB	AL	AG	AK	AH	AS	AI	AW	AR	AM	AT	AJ	AD	AF	AN	AA	AQ	AP	AE	YX	YZ	YG	YM	YT	YS	YW	YB	Location
311	DZYNA1372AB	PC Board w/component, FCBM	1	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	H2
	DZYNA1372AL		--	1	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
	DZYNA1372BAG		--	--	1	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
	DZYNA1372AK		--	--	--	1	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
	DZYNA1372AH		--	--	--	--	1	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
	DZYNA1372AS		--	--	--	--	--	1	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
	DZYNA1372AI		--	--	--	--	--	--	1	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
	DZYNA1372AW		--	--	--	--	--	--	--	1	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
	DZYNA1372AR		--	--	--	--	--	--	--	--	1	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
	DZYNA1372AM		--	--	--	--	--	--	--	--	--	1	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
	DZYNA1372AT		--	--	--	--	--	--	--	--	--	--	1	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
	DZYNA1372AJ		--	--	--	--	--	--	--	--	--	--	--	1	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
	DZYNA1372AD		--	--	--	--	--	--	--	--	--	--	--	--	1	--	--	--	--	--	--	--	--	--	--	--	--	--	
	DZYNA1372AF		--	--	--	--	--	--	--	--	--	--	--	--	--	1	--	--	--	--	--	--	--	--	--	--	--	--	
	DZYNA1372AN		--	--	--	--	--	--	--	--	--	--	--	--	--	--	1	--	--	--	--	--	--	--	--	--	--	--	
	DZYNA1372AA		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	1	--	--	--	--	--	--	--	--	--	--	
	DZYNA1372AQ		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	1	--	--	--	--	--	--	--	--	--	
	DZYNA1372AP		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	1	--	--	--	--	--	--	--	--	
	DZYNA1372AE		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	1	--	--	--	--	--	--	--	
	DZYNA1372DYX		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	1	--	--	--	--	--	--	
	DZYNA1372DYZ		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	1	--	--	--	--	--	
	DZYNA1372DYG		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	1	--	--	--	--	
	DZYNA1372DYM		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	1	--	--	--	
	DZYNA1372DYT		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	1	--	--	
	DZYNA1372DYS		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	1	--	
	DZYNA1372YW		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	1	
	DZYNA1372YB		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	1	

8.3 Base Ass'y (Fig. 3) / UF-311

Ref. No.	Part No.	Description	AB	AL	AG	AK	AH	AS	AI	AW	AR	AM	AT	AJ	AD	AF	AN	AA	AQ	AP	AE	YX	YZ	YG	YM	YT	YS	YW	YB	Location
312	DZACJ0150AB	AC Cord Bracket Ass'y	1	–	–	1	–	–	–	–	–	–	–	–	–	–	–	–	1	–	–	1	–	–	1	–	–	–	–	J1
	DZACJ0150AL		–	1	–	–	–	–	–	1	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	
	DZACJ0150AG		–	–	1	–	1	1	–	–	1	–	1	1	1	1	1	1	–	1	–	–	1	1	–	1	1	1	1	
	DZACJ0150AI		–	–	–	–	–	–	1	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	
	DZACJ0150AM		–	–	–	–	–	–	–	–	–	1	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	
	DZACJ0150AU		–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	1	–	–	–	–	–	–	–	–	
313	DZACJ8213	Cover, PSU	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	J5
314	DS029H	Power Supply Unit	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	–	1	1	1	1	1	1	1	1	H6
	KW1AA164		–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	1	–	–	–	–	–	–	–	–	
315	DZACJ8202	Sheet, Isolation	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	I7
316	DZZHPA67920	Power Supply Cable	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	H6
317	DZACJ8702	Connector Cord w/plug, DC	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	G6
318	DZACJ8703	Connector Cord w/plug, LCU	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	F3
319	DZZHPA67903	Cable Ass'y, Data	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	E3
320	DZACJ8707	Connector Cord w/plug, VIDEO	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	F3
321	MSCS048C94 or PM42L048MDA2 or 42SPM-24DCZH	Motor, Transmitter	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	F2
322	DZACJ8701	Connector Cord w/plug, PNL	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	F2
323	DZACJ8711	Lead Wire w/plug, FG1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	B2
324	DZACJ8712	Lead Wire w/plug, FG2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	C1
325	Not used																													
326	DZACH8626	Actuator, No Paper	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	H1
327	DZACJ8716	Lead Wire w/pulg, FG6	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	H5
328	DZACJ8713	Lead Wire w/pulg, FG3	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	H4
329	DZACJ8712	Lead Wire w/pulg, FG2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	I4
330	DZACJ8204	Sheet, Isolation	1	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	E3
331	DZABU8617	Cap, BT Modular	1	–	–	1	–	–	–	1	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	D1

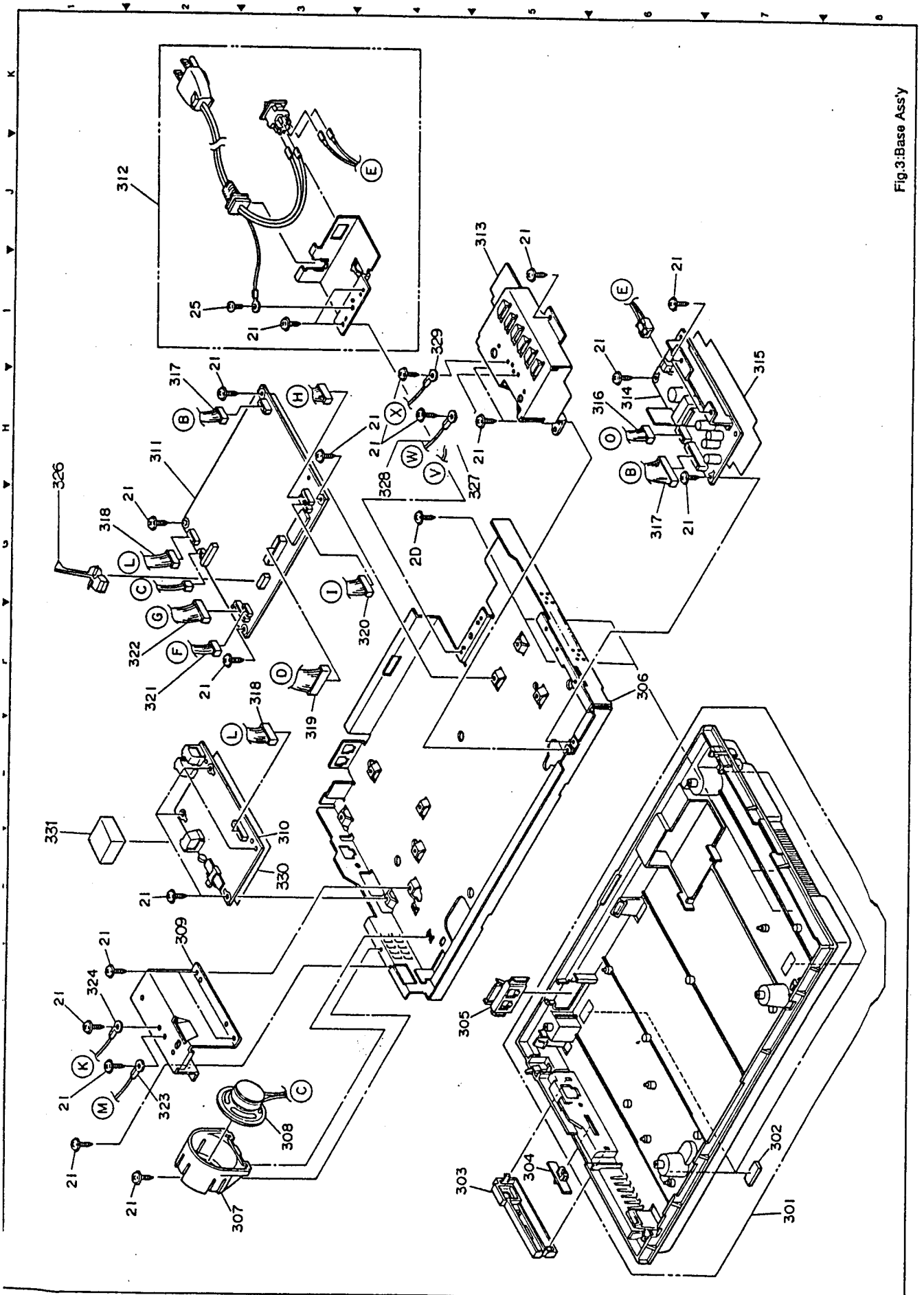


Fig.3:Base Ass'y

8.4 Transmitter Ass'y (Fig. 4) / UF-311

Ref. No.	Part No.	Description	Location
401	DZACJ0301	Chassis Ass'y, Scanner Block	H6
402	DZACJ1021	Fulcrum, Recording Paper Tray	I7, D4
403	DZACJ1022	Bracket, Right, TX Chassis	F8
404	DZACJ1018	Cover, Eject	E7
405	DZACJ1019B	Cover, Stamp	D7
406	DZACJ1005	Bracket, Left, TX Chassis	C5
407	DZACJ1017	Plate 1, Grounding	E6
408	DZACJ1009	Gear 1, Idler	C5
409	DZACJ1008	Gear 2, Idler	C4
410	DZACJ1012	Gear 3, Idler	D4
411	DZACJ1002	Bracket, Motor	B5
412	DZACJ1004	Plate 2, Grounding	A4
413	MSCS048C94 or PM42L048MDA2 or 42SPM-24DCZH	Motor, Transmitter	B3
414	DZACJ1015	Cover, Gear	B2
415	90MXL3.2UK	Belt, Timing	D2
416	DZACJ1007	Gear, Eject	D3
417	DZACJ1006	Gear, Feed	E2
418	DZACC1015	Gear, ADF	D1
419	DZABN1006	Bushing, Roller	E3, E2, H3, G4, F4
420	DZACJ1020	Shaft, ADF	F2
421	DZABG1420	Case, Clutch	F2
422	DZABG1417	Sleeve, Driving	F3
423	DZACC1036	Spring, Clutch	F3
424	DZABG1419	Sleeve, Clutch	G3
425	DZACC1014	Roller, ADF	G3
426	DZACJ1010	Roller, Feed	F3
427	DZACJ1011	Roller, Eject	E3
428	DZACJ1013	Spring, Latch	G2
429	DZACH1022	Latch	H2
430	DZACJ0103	Guide Ass'y, Document	J1
431	DZACJ8802	PC Board w/component, SNS	J5
432	DZACH1017	Actuator, Document Sensor	I4
433	DZACJ1016	Actuator, Read Point Sensor	H5
434	DZACH1019	Actuator, Door Sensor	J5, H6
435	Not used		
436	Not used		
437	Not used		
438	DZACH1044	Film, Pre-feed	K4
441	DZACJ8716	Lead Wire w/pulg, FG6	F8

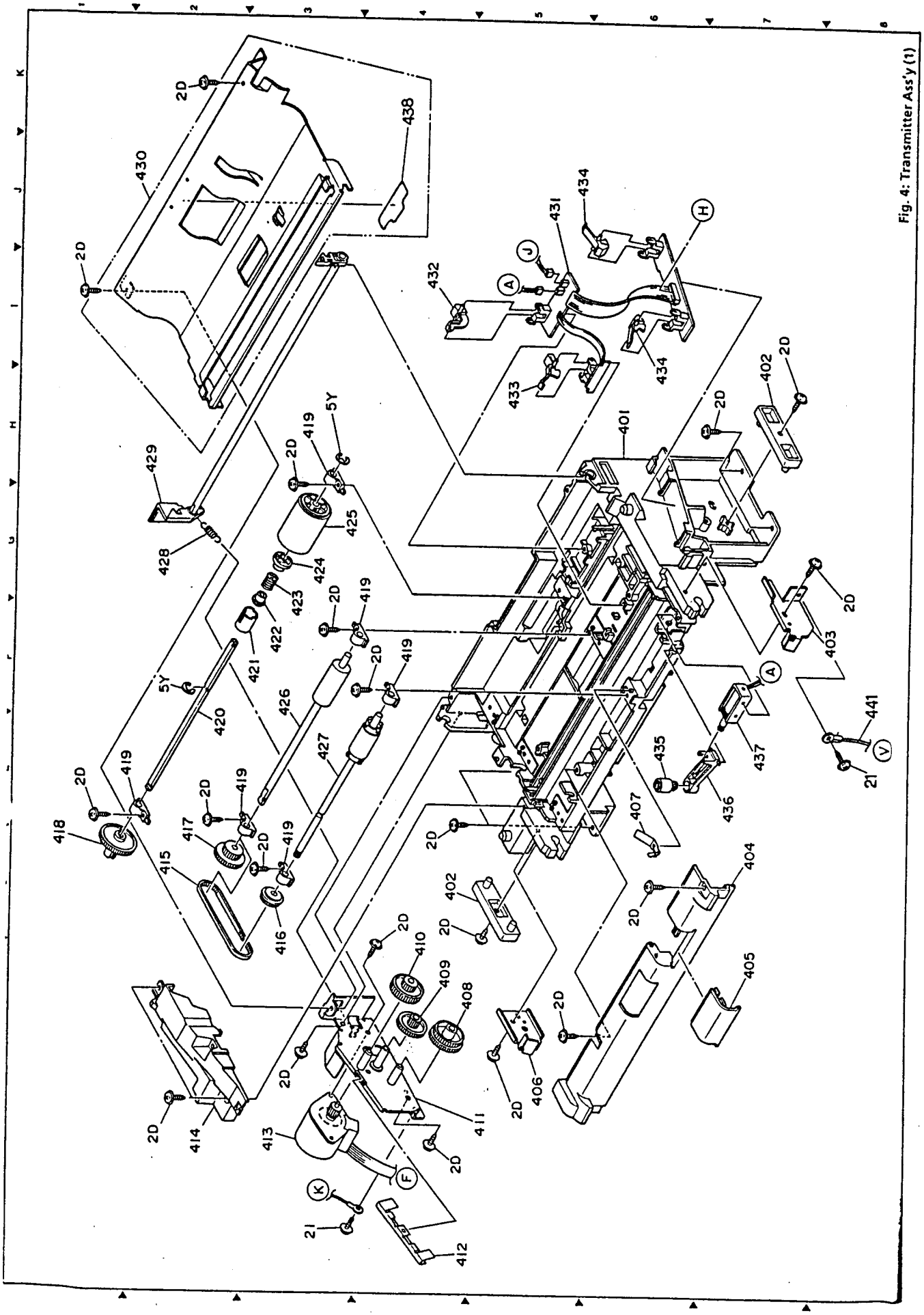


Fig. 4: Transmitter Ass'y (1)

8.5 Transmitter Ass'y (2) (Fig. 5) / UF-311

Ref. No.	Part No.	Description	Location
501	DZACH1204	Lever, Pressure Adjusting	J2
502	DZACH1207	Adjustor, Separator	I3
503	DZACJ1202	Spring, Separator	I4
504	DZACJ1203	Holder, Separator Spring	I4
505	DZACH1206	Holder, Separator Rubber	K4
506	AR1210	Rubber, Separator	K5
507	DZACJ1213	Spring, Sub	I3
508	DZACJ1201	Chassis, TX Upper	I6
509	DZACJ1211	Spring, Release	F6
510	DZACJ1206	Bracket, Scanning Plate	G7
511	DZACJ1205	Plate, Scanning	G8
512	DZACJ1212	Brush, Antistatic	C6
513	DZACA1153	Roller 1, Feed Pinch	B5
514	DZACJ1207	Shaft 1, Pinch Roller	B4
515	DZACJ1209	Plate Spring 1, Pinch Roller	A3
516	DZACJ1208	Bracket, Pinch Roller	A3
517	DZACJ1210	Bracket, ADF	B1
518	DZACJ1204	Plate Spring 2, Pinch Roller	F2
519	DZABL1226	Shaft 2, Pinch Roller	E3
520	DZACC1507	Roller 2, Feed Pinch	F3
521	DZACJ8711	Lead Wire w/plug, FG1	B3
522	DZACJ8713	Lead Wire w/plug, FG3	D3

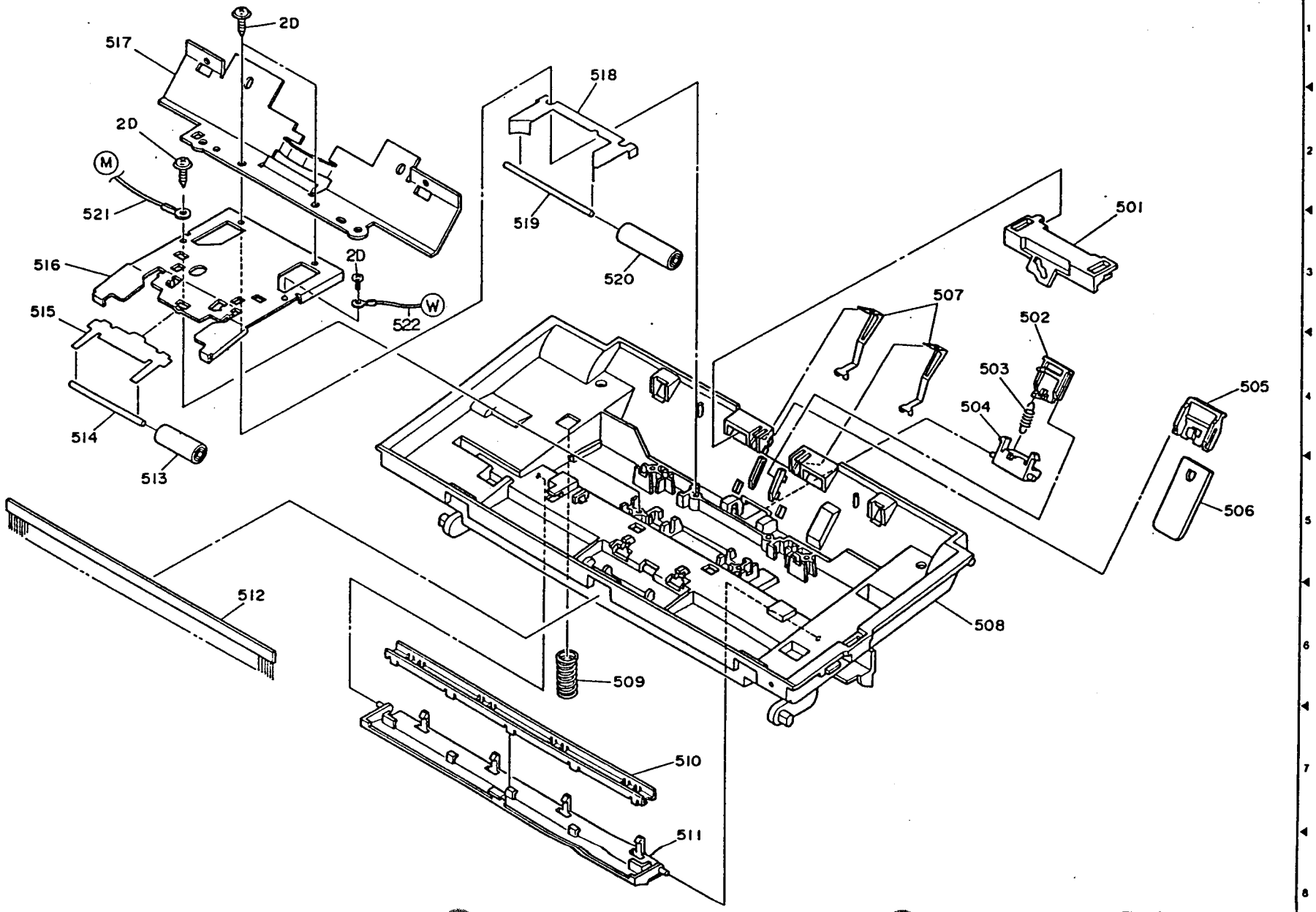


Fig.5:Transmitter Ass'y(2)

8.6 Transmitter Ass'y (3) (Fig. 6) / UF-311

Ref. No.	Part No.	Description	Location
601	DZACJ0301	Chassis Ass'y, Scanner Block	J5
602	DZACJ0303	Cover Ass'y, CCD	K2
603	DZACJ1151B	Mirror M	F6
604	DZACJ1151A	Mirror L	E7
605	DZACJ1151C	Mirror S	D7
606	DZACJ1155	Plate Spring, Mirror	E6, D5, D6, C6, D7
607	DZACJ1157	Cover, Mirror	I8
608	DZACJ1154	Glass, Scanning	E1
609	DZACJ1156	Bracket, LED	D3
610	DZACJ8804	LED Array	B3
611	DZACJ1161	Plate 3, Grounding	D3
612	DZACJ1160	Sheet, CCD Cover	J3
613	DZACJ8707	Connector Cord w/plug, VIDEO	I4
614	DZACJ1165	Guide, Dust Protection	B1
615	DZACJ8712	Lead Wire w/pulg, FG2	D2
616	DZYNA1374	PC Board w/component, CCD	H3
617	FB52C or M081A	Lens	G3
618	DZACJ1162	Bracket, Lens	F3

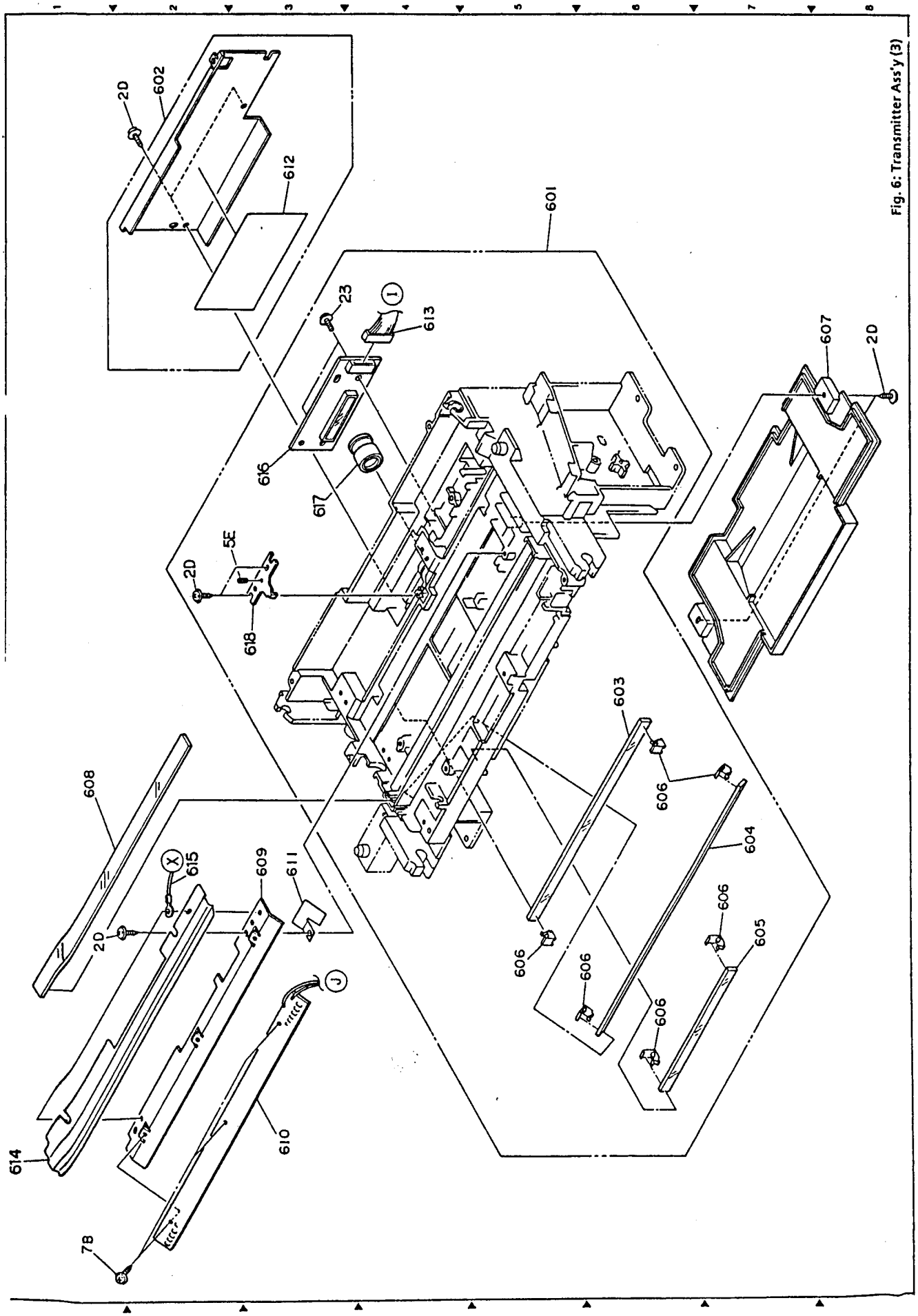


Fig. 6: Transmitter Ass'y (3)

8.7 Receiver Ass'y (Fig. 7) / UF-311

Ref. No.	Part No.	Description	Location
701	DZZHPA2112A	GPM	J·5
702	DZACH8301	Isolator	E·1, D·3, K·5, F·5

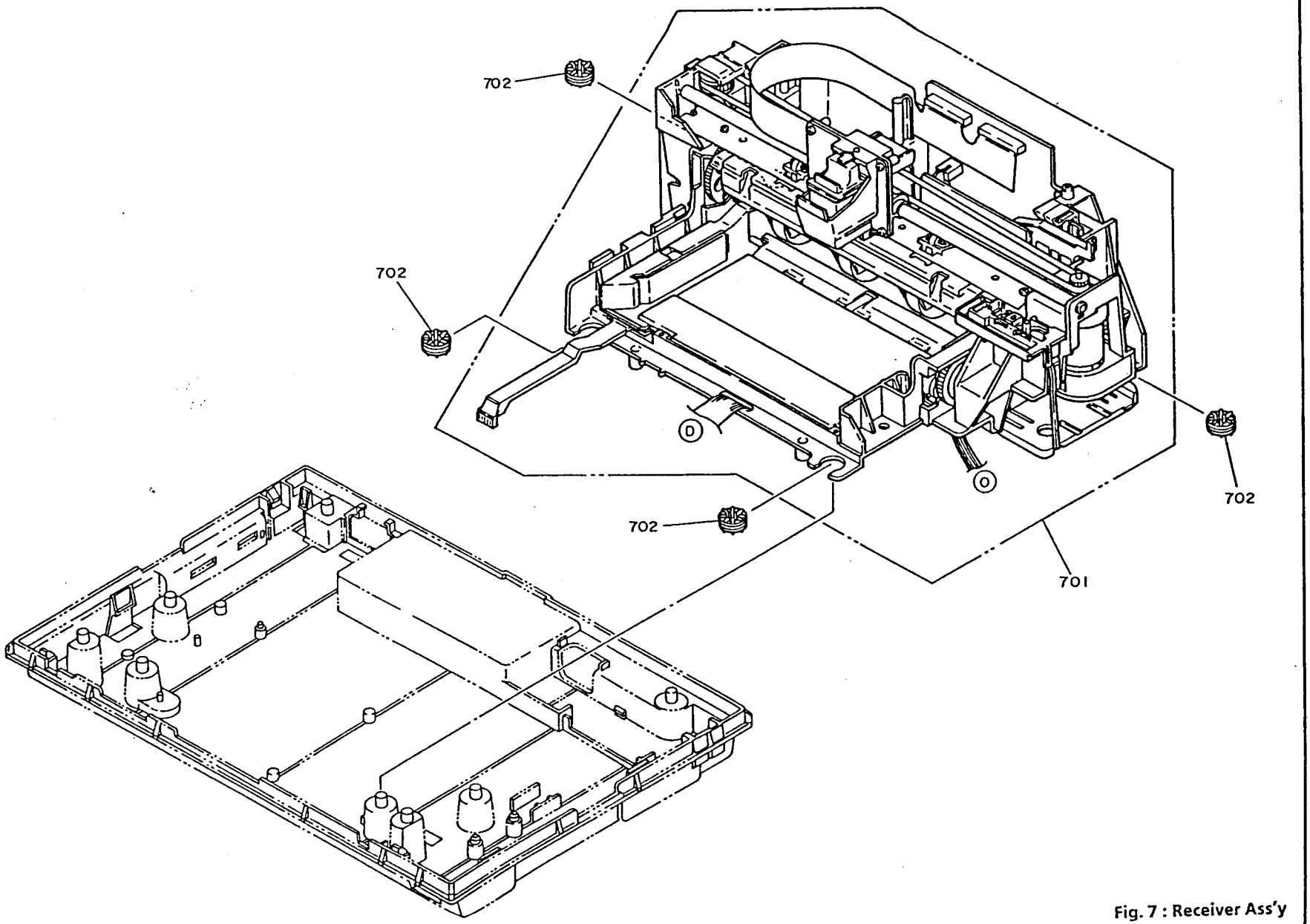


Fig. 7 : Receiver Ass'y

8.8 Unpacking (Fig. 8) / UF-311

Ref. No.	Part No.	Description	AB	AL	AG	AK	AH	AS	AI	AW	AR	AM	AT	AJ	AD	AF	AN	AA	AQ	AP	AE	YX	YZ	YG	YM	YT	YS	YW	YB	Location
801	DZACJ4001	Cushion Kit, Styrofoam	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	A5, E7
802	DZACJ4101ABL DZACJ4101AIL	Carton	1 --	1 --	1 --	1 --	1 --	1 --	-- 1	1 --	1 --	1 --	1 --	1 --	1 --	1 --	1 --	1 --	1 --	1 --	1 --	1 --	1 --	1 --	1 --	1 --	1 --	1 --	1 --	B8
803	DZACJ4104	Carton, Accessory	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	D5
804	DZACJ4105	Pad, Accessory	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	E3
808	DZZHPA51602A	Print Cartridge	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	C2
809	DZACH8555Y5	Document Sub-Tray	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	D3
810	DZACH8572	Document Return Tray	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	E1
811	4B1006	User's Guide	1	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	E2
	4B1022		--	1	--	1	--	--	--	1	--	--	1	--	--	--	--	--	1	--	1	1	1	1	1	1	1	1	--
	4B1012		--	--	1	--	--	--	--	--	--	--	--	--	--	--	--	1	--	--	--	--	--	--	--	--	--	--	--	--
	4B1031		--	--	--	--	1	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	4B1018		--	--	--	--	--	1	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	4B1033		--	--	--	--	--	--	1	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	4B1029		--	--	--	--	--	--	--	--	1	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	4B1030		--	--	--	--	--	--	--	--	1	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	4B1027		--	--	--	--	--	--	--	--	--	--	--	1	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	4B1032		--	--	--	--	--	--	--	--	--	--	--	--	1	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	4B1026		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	1	--	--	--	--	--	--	--	--	--	--
	4B1035		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	1	--
	4B1053		--	--	--	--	--	--	--	--	--	1	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	4B1054		--	--	--	--	--	--	--	--	--	1	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

8.8 Unpacking (Fig. 8) / UF-311

Ref. No.	Part No.	Description	AB	AL	AG	AK	AH	AS	AI	AW	AR	AM	AT	AJ	AD	AF	AN	AA	AQ	AP	AE	YX	YZ	YG	YM	YT	YS	YW	YB	Location
811	4B1008	Quick Guide	1	1	--	1	1	--	--	1	1	--	1	--	--	--	--	--	1	--	1	1	1	1	1	1	1	1	--	E2
	4B1019		--	--	--	--	--	1	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
	4B1028		--	--	--	--	--	--	--	--	--	--	--	1	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
	4B1045		--	--	--	--	--	--	--	--	--	--	--	--	1	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
	4B1036		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	1	
811	AM1921S1	Document Carrier	1	1	1	1	1	1	1	1	1	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	E2
814	DZACJ4106	Pad, Top	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	B1
815	DZZSP09172	Cord, Telephone Line	1	--	--	1	--	--	--	1	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	C6
	DZZSP09184		--	--	1	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
	SP09090		--	1	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
	DZABU8591		--	--	--	--	1	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
	DZABU8590		--	--	--	--	--	--	--	--	--	--	--	--	--	1	1	--	--	--	--	--	--	--	--	--	--	--	--	
	DZABU8592A		--	--	--	--	--	--	--	--	--	1	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
	DZZSP09165		--	--	--	--	--	--	1	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
	DZZSP09115		--	--	--	--	--	--	--	--	--	--	--	1	--	--	--	--	--	--	1	1	--	--	--	--	--	--	--	
	STDM13-3M-4/6		--	--	--	--	--	--	--	--	--	--	--	--	1	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
	DZZSP09120		--	--	--	--	--	1	--	--	1	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
816	DZBAM4120	Protection, Styrofoam	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	B5
817	DZACH0116B	Terminal Box	--	--	--	--	--	--	--	--	--	--	1	--	--	--	--	1	1	--	--	--	1	1	1	1	1	1	1	C3
	DZACH0116C		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	1	--	--	--	--	--	--	--	--	--	

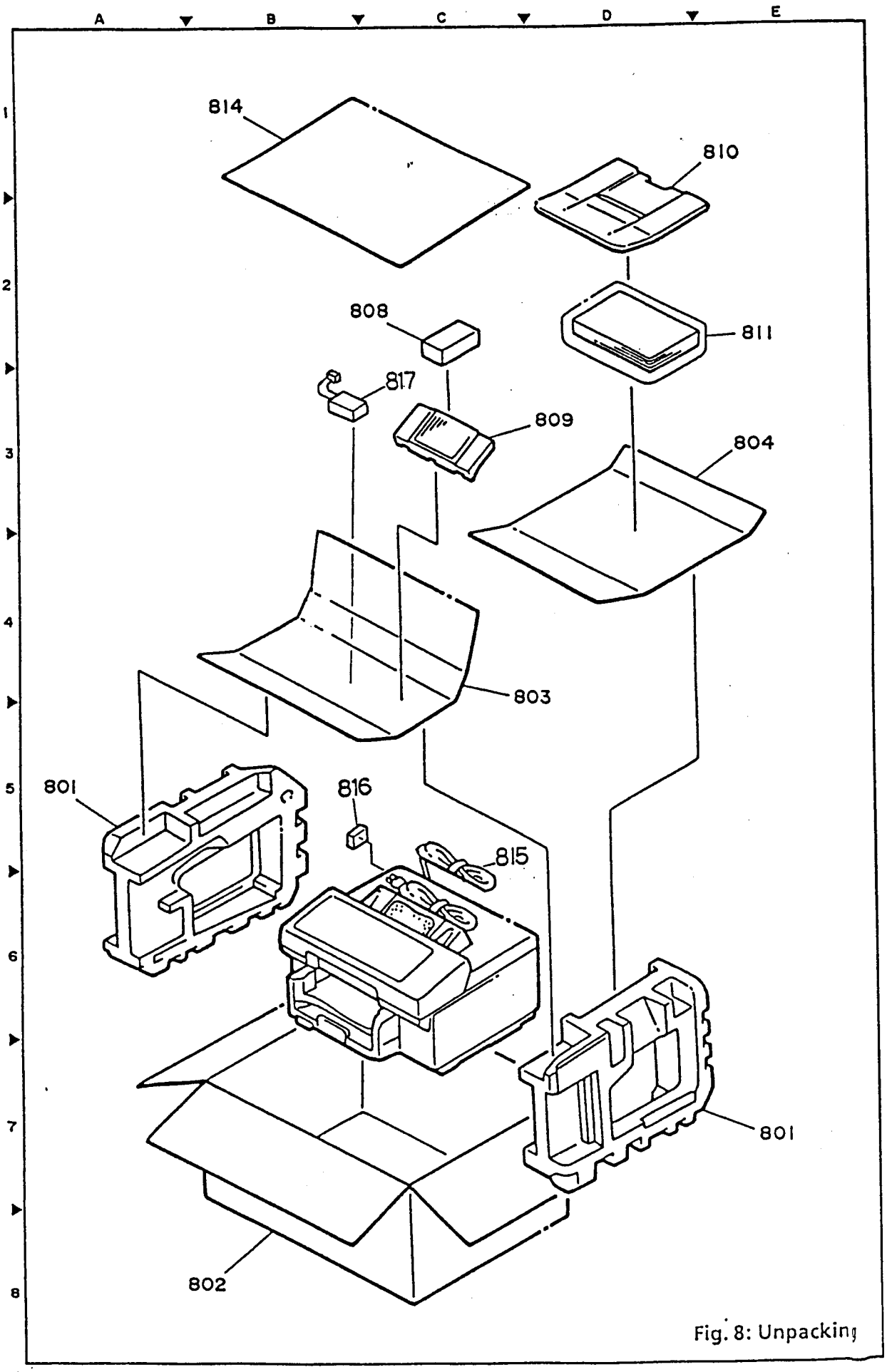


Fig. 8: Unpacking

8.9 Screw, Washer , Retainer / UF-311

Ref. No.	Part No.	Description	Location
25	B4×8TTS	Screw	--
21	B3×6TTS	Screw	--
2D	Q3×8	Screw	--
5S	B2×6TTB	Screw	--
7B	P2.6×6TTB	Screw	--
5Y	JE-4	Retainer, E-Type	--
5E	SS-WP3×6	Screw	--
23	P3×8SMW	Screw	--

Appendix

Abbreviation List ..... 9 - 2
Optional Unit & Parts ..... 9 - 5

ıbbreviation List

Abbreviation	Function	Signal format
ABC	Automatic Background Control	–
ASCI	Application Specific Integrated Circuit	
ADF	Automatic Document Feeder	–
AM	Amplitude Modulation	–
AMS	Automatic Mode Selection	–
ATT	Attentuator	
bps	bit per second	–
CCD	Charge Coupled Device	–
CCITT	International Consultative Committee for Telephone and Telegram (Comité Consultatif Internationalé Télégraphique et Téléphonique)	–
CED	Called station identification	2100 Hz
CFR	Confirmation to Receive	X010 0001 1650 Hz
CI	Call Indicator	
CIG	Calling Subscriber Identification	1000 0010
CML	Connect Modem to Line	
CNG	Calling Tone	1100 Hz for 500 ms
CNP	Connector Plug	–
CPI	CPU Peripheral Interface	–
CPU	Central Processing Unit	–
CSI	Called Subscriber Identification	0000 0010
DCN	Disconnect	X101 1111
DCS	Digital Command Signal	X100 0001
DICEP	Document Image Compression and Expansion Processor	–
DIS	Digital Identification Signal	0000 0001
DOC	Document Sensor	–
DTC	Digital Transmit Command	1000 0001
DTMF	Dual-Tone Multi frequency	–
EEPROM	Electrical Erasable Programmable Read Only Memory	–
EOL	End of Line	–
EOM	End of Message	X111 0001 1100 Hz
EOP	End of Procedure	X111 0100
EPROM	Erasable Programmable Read Only Memory	–
EP tone	Echo Protector Tone	1700, 1800 Hz
EQL	Equalizer	–

Abbreviation List

Abbreviation	Function	Signal format
FCA	Facsimile Control Adaptor	–
FPA	Facsimile Peripheral Adaptor	–
FSK	Frequency Shift Keying	–
FTT	Failure to Train	–
GC	Group Command	2100 Hz for 1.5-10.0s
GI	Group Identification	1850 Hz
G2	Group 2	–
G3	Group 3	–
HTP	Halftone Processor	
ID	Identification	–
I/O	Input/Output	–
JP	Jumper	–
LCD	Liquid Crystal Display	–
LCS	Line Conditioning Signals	1100 Hz
LCU	Line Control Unit	–
LED	Light Emitting Diode	–
LSI	Large Scale Integrated Circuit	–
MCF	Message Confirmation	1650 Hz
MH	Modified Huffman (coding scheme)	–
MODEM	Modulate and Demodulate Device	
MOS	Metal Oxide Semiconductor	–
FET	Field Effect Transistor	–
MPS	Multi Page Signaling	X111 0010
MPU	Micro Processing Unit	–
MR	Modified Read (coding scheme)	–
MWS	White Line Skip	–
NSC	Non-Standard Facilities Command	1000 0100
NSF	Non-Standard Facilities	0000 0100
NSS	Non-Standard Set-up	X100 0100
PCA	Printed Circuit Assembly	
PCB	Printed Circuit Board	–
PIN	Procedural Interrupt Negative	X011 0100

Abbreviation List

Abbreviation	Function	Signal format
PIS	Procedure Interrupt Signal	462 Hz for 3s
PM	Phase Modulating	–
pps	pulse per second	–
PRI-Q	Procedure Interrupt — EOM	X111 1001
PSA	Paper Sensor	–
PSCM	Programmable Signal Chip Modem	
PSTN	Public Switched Telephone Network	–
PTT	Postal and Telecommunications Authority (Post, Telegraph & Telephone)	–
QAM	Quadrature Amplitude Modulation	–
RAM	Random Access Memory	–
RH	Relative Humidity	–
ROM	Read Only Memory	–
RPS	Read Point Sensor	–
RTC	Return to Control	–
RTN	Retrain Negative	X011 0010
RTP	Retrain Positive	X011 0011
RX	Receive	–
TRC	System Control (Transceiver) Unit	–
SCF	Switched Capacitance Filter	
S/N	Signal/Noise	–
STD	Standard	–
TCF	Training Check	Zeros for 1.5s
TP	Test Pin	–
Tx	Transmit	–
TSI	Transmitting Subscriber Identification	X100 0010
TM	Transmission Motor	–
VR	Volume/Variable Resistor	–
VSB	Vestigial Sideband	–

Optional Unit & Parts

No.	Order Number	Description
1	UE-403061	Option Memory M II (512K)
2	UE-403062	Option Memory M III (1M)
3	UE-403063	Option Memory M IV (2M)

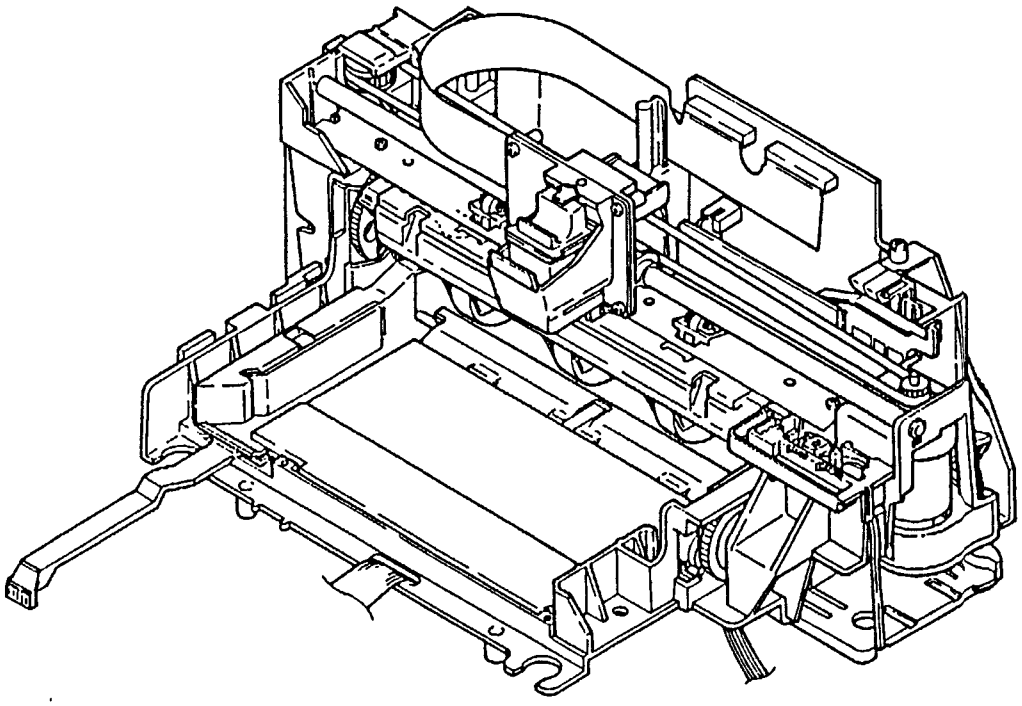
ORDER NO.MGCS920420S2
Standard Version

Service Manual

Supplement -1

Graphics Print Mechanism (GPM) for UF-300/311/312

Please file and use this supplement manual with the UF-300 Service Manual, Order No. MGCS910220C2 and UF-311 Service Manual, Order No. MGCS920420C2.



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Chapter 1
Specifications

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1. Specifications

1.1 Graphics Print Mechanism (GPM) Specifications

Printing Method	:	Raster Graphics
Print Resolution	:	300 x 300 dpi
Directional Printing	:	Bidirectional
Print Speed (Print Width = 208mm) (Resolution = 100dpi)	:	〈 One Line 〉 (excluding load & eject time) Quality Mode ..... 54 msec./line Fast Mode ..... 33 msec./line 〈 Full Page 〉 (including load & eject time) Quality Mode ..... Approx. 66 sec. (Letter size) Approx. 70 sec. (A4 size) Fast Mode ..... Approx. 45 sec. (Letter size) Approx. 47 sec. (A4 size)
Carriage Speed	:	Quality Mode ..... 12 ips Fast Mode ..... 24 ips
Paper Load Time	:	4.5 sec.
Paper Eject Time	:	4.5 sec.
Vertical Alignment	:	± 0.006" (0.152mm)

Note : "ips" = inch per second

1.2 Print Cartridge Specifications

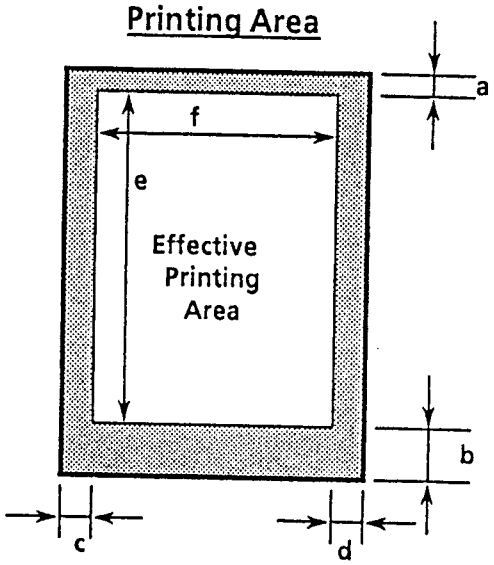
Type	:	Thermal Inkjet
Cartridge Life (using CCITT No.1 Chart)	:	Quality Mode ..... Approx. 400 pages (A4 size) Fast Mode ..... Approx. 750 pages (A4 size)
Number of Nozzles	:	50
Dot Size	:	0.0030" to 0.0050" in diameter (0.0762mm to 0.127mm)

1.3 Paper Specifications

The GPM has been designed to work well with most types of paper, but some variables of paper composition may significantly affect print quality and paper handling. Most paper manufactured for high-quality photocopying yields good results for general applications and most cotton bond papers yield excellent results. Paper should be tested fully before it is purchased in order to ensure desirable performance.

Paper Path	: Cut sheet		
Paper Grain	: Long grain only		
Paper Size	: Letter	8.5" x 11"	(216mm x 280mm)
	Legal	8.5" x 14"	(216mm x 356mm)
	A4	8.26" x 11.69"	(210mm x 297mm)
Printing Area	: See Figure below.		
Paper Supply Tray Capacity	: Approx. 100 sheets (using 20 lbs paper)		
Paper Weight	: 16 lbs to 24 lbs (60 to 90 g/m2)		
Print Skew	: 0.006"/inch		

Printing Area



Paper Size	Margin "a" (Top)	Margin "b" (Bottom)	Margin "c" (Left)	Margin "d" (Right)	"e" Maximum Print Length	"f" Maximum Print Width
A4	0.039" (1mm)	0.52" (13mm)	0.039" (1mm)	0.039" (1mm)	11.14" (283mm)	8.19" (208mm)
Letter	0.039" (1mm)	0.52" (13mm)	0.16" (4mm)	0.16" (4mm)	10.43" (265mm)	8.19" (208mm)
Legal	0.039" (1mm)	0.52" (13mm)	0.16" (4mm)	0.16" (4mm)	13.46" (342mm)	8.19" (208mm)

Chapter 2
Mechanism Description

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2.3 Print Cartridge 2-3

2 Mechanism Descriptions

2.1 Overall Description

The Graphics Print Mechanism (GPM) is a 300 x 300 dots per inch (dpi) thermal inkjet print engine. The GPM prints raster graphics bidirectionally. Inkjet print cartridges provide reliable performance with user replaceable convenience. A printed circuit assembly (Controller PCA), mounted toward the back of the mechanism, receives commands and controls the operations of the mechanism.

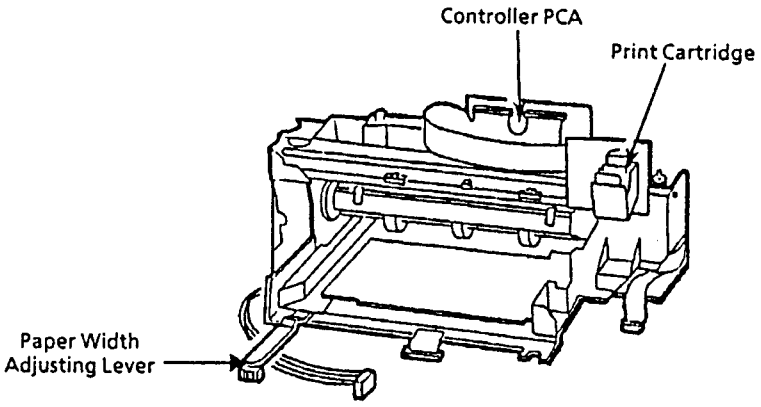

Fig. 2-1 : Graphics Print Mechanism

Note : The paper width Adjusting Lever is unprotected and is vulnerable to breakage outside of a product case. The GPM must be replaced if the Lever breaks. Use extreme caution when handling the GPM outside of the product case.

2.2 GPM Operations

The Graphics Print Mechanism (GPM) provide the following operations:

1) Paper pick (loading paper)
2) Paper movement (vertical positioning)
3) Print Cartridge movement (horizontal positioning)
4) Paper detection at the Print Cartridge
5) Out-of-Ink detection
6) Paper eject

Read Chapter 3 for more information on each these GPM operations.

2.3 Print Cartridge

The GPM uses consumer replaceable Print Cartridge. The Print Cartridge is available through authorized dealers.

Note : The Print Cartridge Ink contains diethylene glycol, which may be harmful if swallowed by children. Keep new and used cartridges out of reach of children.

If you experience Print Cartridge or print quality problems, read Chapter 4, Troubleshooting.

(1) Print Cartridge Tips

a) Do not use Print Cartridge after the expiration date. See "Print Cartridge Expiration Information" in Chapter 4.
b) Keep the unused Print Cartridge sealed in their containers. When replacing Print Cartridge, install the new cartridge promptly.
c) Do not turn the product off with the Print Cartridge out of the "park" or "home" position (right end of the cartridge path). When in the park position, the printer service cap seals the Print Cartridge nozzles from exposure to air, preventing the ink from drying in the Print Cartridge nozzles.
d) Do not allow the Print Cartridge contacts and nozzles to touch any surface or object, including your fingers. Skin oil and dust can cause print quality or missing dot problems.
e) Store Print Cartridges at room temperature.

(2) Ink Capacity

The usable Ink capacity of the Print Cartridge is over 120 million dots. The actual number of pages that a new Print Cartridge will be able to print is determined by the print density and the paper size of the document. See Chapter 1 on Print Cartridge Specifications.

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3. Functional Operation

3.1 Introduction

The GPM performs the following operations:

1) Carriage movement (horizontally positions the Print Cartridge across the page)
2) Paper movement
   a) Loading paper from the Paper Supply Tray
   b) Vertical positioning for printing up or down the page
   c) Ejecting paper to the Paper Exit Tray
3) Print Cartridge maintenance

The mechanism operations are driven by two motors:

1) Carriage motor
2) Paper motor

3.2 Carriage Movement

The Print Cartridge rides across the paper in the Carriage Assembly on the Carriage Rod and the Carriage Guide. The Carriage Belt, attached to the Carriage Assembly, loops around the Carriage Motor Drive Pulley and Bearing Assembly. A Pen Tensioner and Compression Spring push the Bearing Assembly away from the Carriage Motor for Carriage Belt tension. As the Carriage Motor turns, the Carriage Assembly is driven across the mechanism. An encoder inside the Carriage Motor digitizes the motor rotation and feeds data to the Controller PCA to monitor the carriage position.

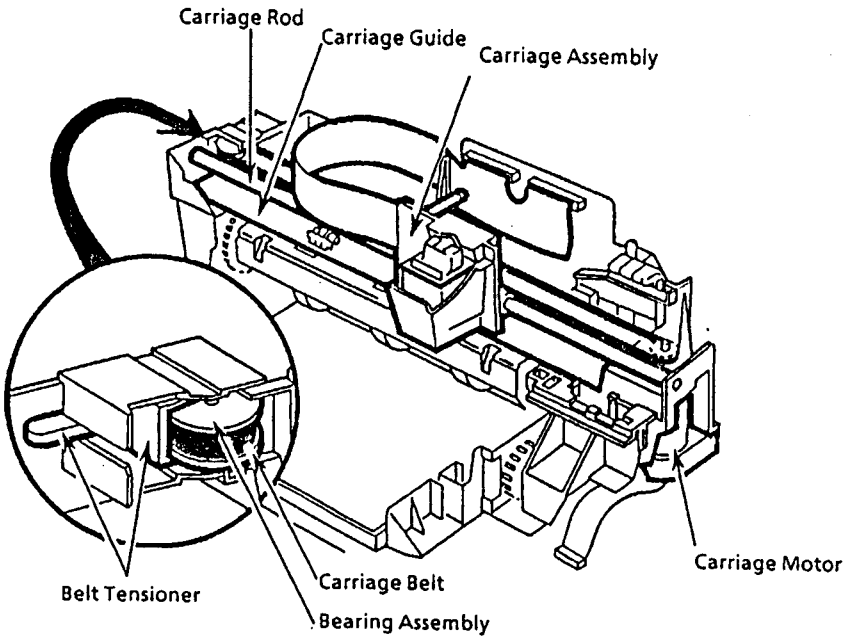


Fig. 3-1 : Carriage Motor Drive Identification

3.3 Paper Movement

The Paper Motor, mounted on the left side of the mechanism, drives the Drive Rollers, Pressure Plate, and Pivoting Platen. A transmission is used to engage and disengage these paper movement operations. This prevents multiple paper movement operations occurring simultaneously.

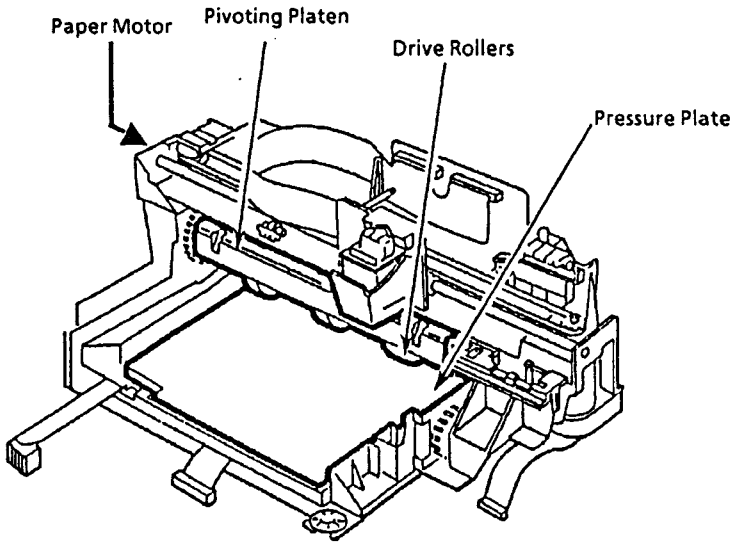


Fig. 3-2 : Paper Motor Drive Identification

1) Drive Rollers

The Drive Rollers pick paper from the Paper Supply Tray, feed paper past the Print Cartridge for vertical print positioning, and push paper to the Paper Exit Tray. The Drive Rollers are coupled to the Paper Motor through a set of Reduction Gears. The Reduction Gears and Drive Rollers are always engaged to the Paper Motor and turn during all paper movement operations.

2) Pressure Plate

The Pressure Plate raises the Paper Supply Tray to the Drive Rollers so that the Drive Rollers can pick the top sheet of paper from the Paper Supply Tray. Once the mechanism picks the top sheet of paper from the Paper Supply Tray, the Pressure Plate lowers the stack of paper away from the Drive Rollers to prevent a second sheet of paper.

The Pressure Plate is spring loaded and held down by a Cam to the right of the plate. Pressure Plate gearing rotates the Cam, allowing the spring loaded Pressure Plate to raise paper to the Drive Rollers.

3) Pivoting Platen

The Pivoting Platen drops paper from the Print Cartridge to the Paper Exit Tray. An Arm at the right end of the Pivoting Platen slides on a pin on the Pivoting Platen Gear. As the Gear turns, the front edge of the Pivoting Platen drops and spreads the Paper Exit Tray "wings".

3.4 Transmission

The Transmission is a cluster of gears that engage the Paper Motor to the Pressure Plate Gears and Pivoting Platen Gears. Only one set of gears can be started at a time, but the transmission functions can overlap. For example, the printer can pick a sheet from the Paper Supply Tray before the paper eject cycle is complete.

An Interposer Spring, attached to the Carriage Assembly, is positioned under a Transmission Trigger Lever. A ledge below the Interposer Spring raises the spring as the Paper Motor turns. The spring pushes the Trigger Lever up, engaging a set of gears. The gears turn one complete cycle, then automatically disengage. The Trigger Levers are as follows:

1) The left Trigger Lever engages the Pivoting Platen Gears.
2) The right Trigger Lever engages the Pressure Plate Gears.

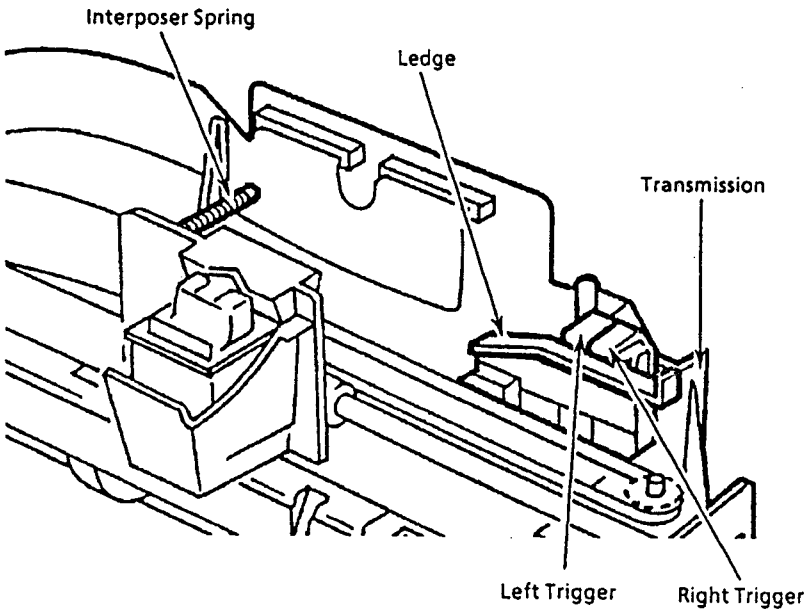


Fig. 3-3 : Transmission Identification

3.5 Print Cartridge Maintenance

The GPM contains a service station to maintain the recording print quality. The service station includes the following:

1) Sled and Cap
2) Wiper
3) Spittoon

A bracket retains the Sled in the service station.

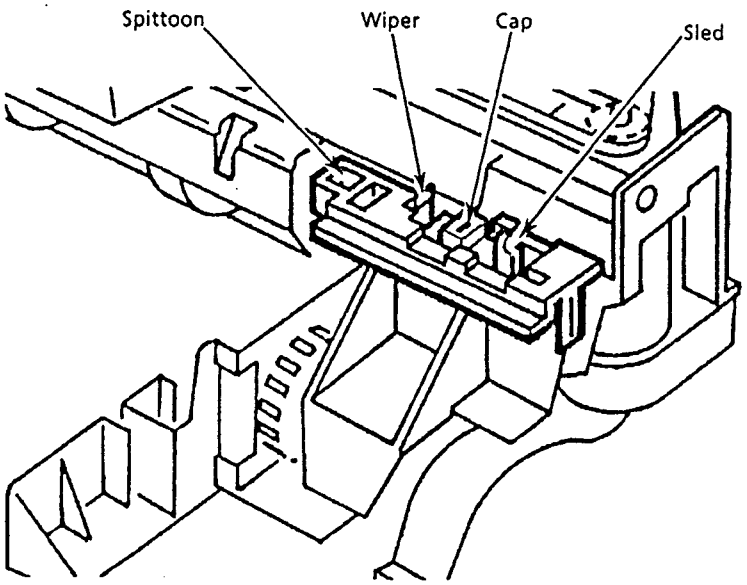


Fig. 3-4 : Service Station Parts Identification

1) **Sled and Cap**
   The Sled slides inside the Service Station as the Print Cartridge moves in and out of the Service Station. A Cap mounted on the sled seals the Print Cartridge Nozzles while the GPM is idle or the Print Cartridge is in the Service Station. As the Print Cartridge moves to the park position, it pushes the Sled to the right end of the Service Station. The Sled slides up a ramp and the Cap contacts the Print Cartridge Nozzle plate. When the carriage leaves the park position, it slides the Sled down the ramp to the left-end of the Service Station.

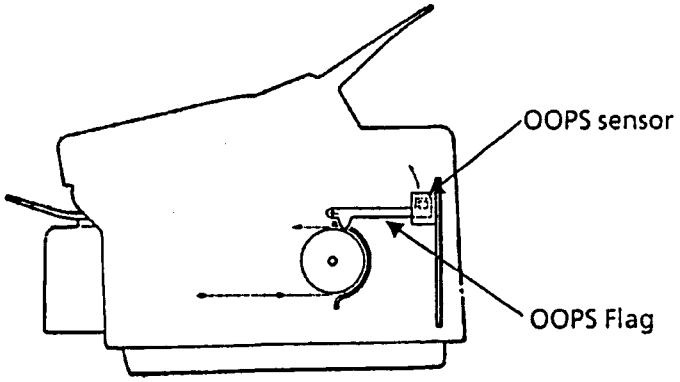
2) **Wiper**
   The Wiper, located left of the Sled, removes dust and foreign particles from the Print Cartridge Nozzles. The wiping action occurs whenever the Print Cartridge moves in and out of the park position.

3) **Spittoon**
   The GPM spits ink into the Spittoon to refresh ink in the Print Cartridge Nozzles. The spitting occurs between printing pages and when a Print Cartridge is installed in the machine.

3.6 Detecting the Recording Paper Position

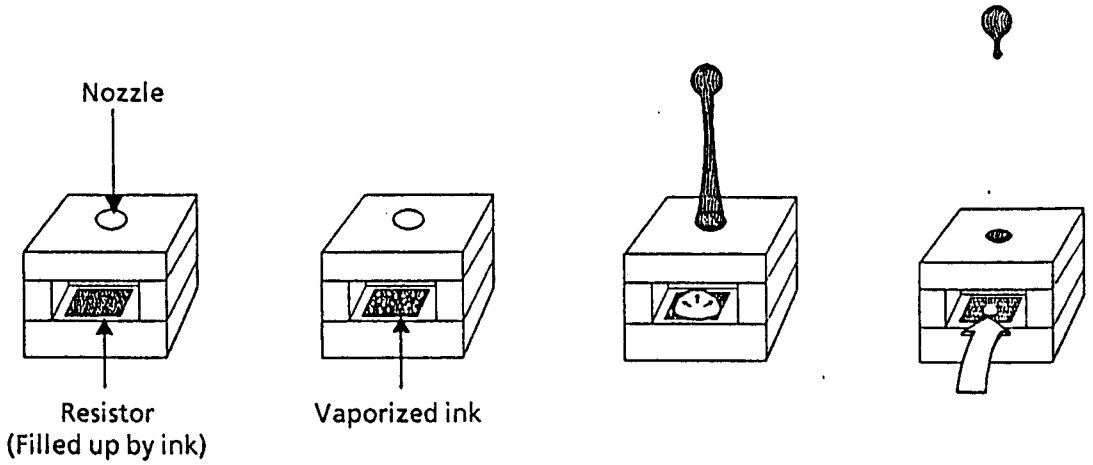
The GPM contains a OOPS sensor for detecting an On-edge and Off-edge of the recording paper. The sensor detects paper at the printing position.

The OOPS (Out-of-Paper Sensor) flag identifies paper loaded at the Pivoting Platen. The GPM detects a paper jam if the OOPS flag indicates paper is located at the printing position after a paper eject should have occurred.



3.7 Inkjet Printing

The ink cartridge consists of a resistor surrounded by an ink channel, with both elements closely aligned to an exit nozzle. The print head has 50 nozzles. When a resistor is heated, the adjacent ink is vaporized to create a drive bubble. This forces an ink droplet out through the nozzle. After the droplet leaves and the bubble collapses, capillary force draws fresh ink from the feed channel to refill the chamber. The drawings show the general concept of the process.



Standby.

Ink heats up and droplet forms.

Droplet expands and forces out ink.

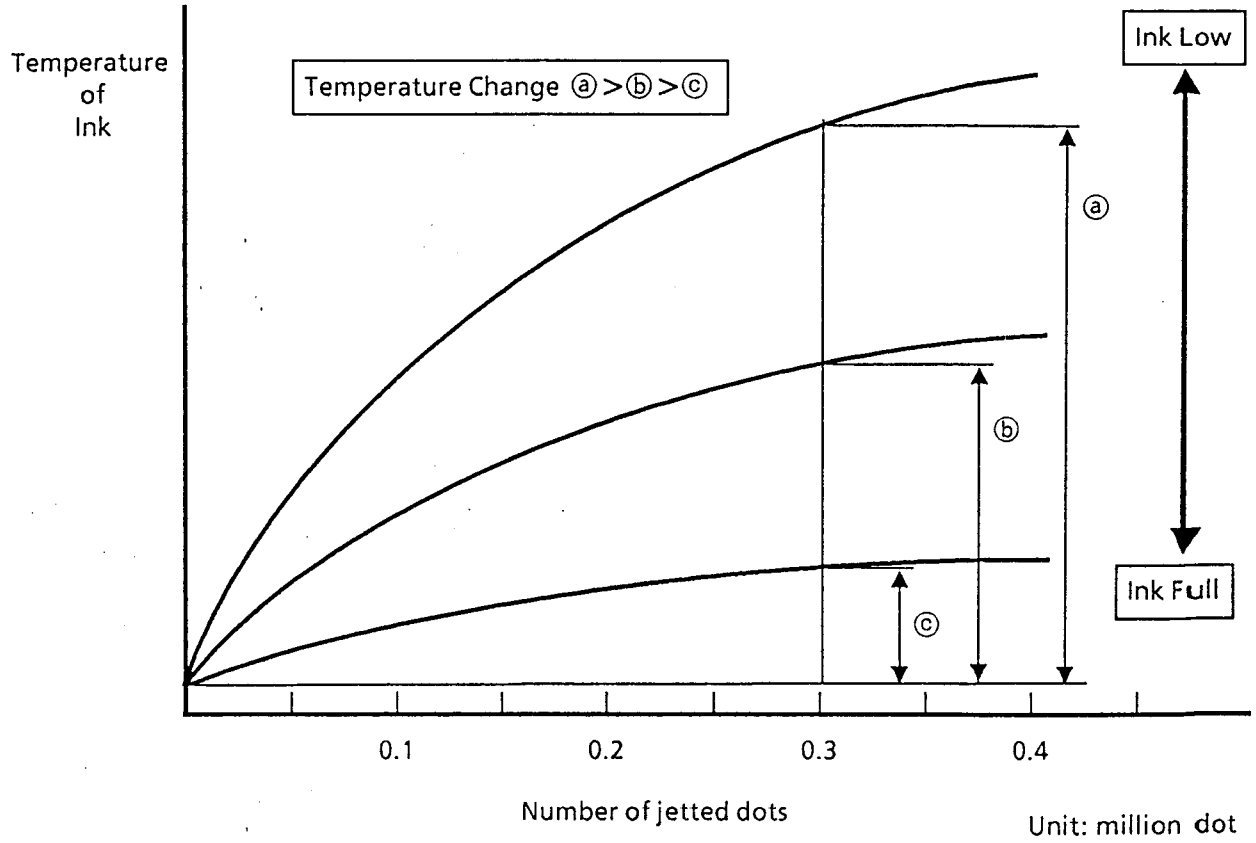
Droplet leaves and bubble collapses. Capillary force draws fresh ink into the chamber.
Back to standby.

3.8 Detecting Out-of-Ink

When jetting out ink, the ink stored in the cartridge is heated by the resistor which creates a drive bubble. If a ink cartridge is a high ink level, the temperature change of ink stored in the cartridge becomes lower. If the ink cartridge has a low ink level, the temperature change of ink becomes higher.

Out-of-Ink condition is measured by the temperature change when jetting out a certain value of ink from the all nozzle.

The temperature change is indirectly measured by measuring the resistance of the integrated resistor.



3.8.1 Condition of detection

- Capacity of ink per one cartridge : 120million dots over
- Capacity of ink to be used for measuring out-of-ink condition per one time : 0.3 million dots per one nozzle
- Timing of detection
  a) when turning power on.
  b) after replacing cartridge.
  c) after printing 10 million dots each. (when the cartridge has a high ink level.)
  d) after printing 4 million dots each.(when the cartridge has a low ink level.)

3.8.2 Judgment of out-of ink

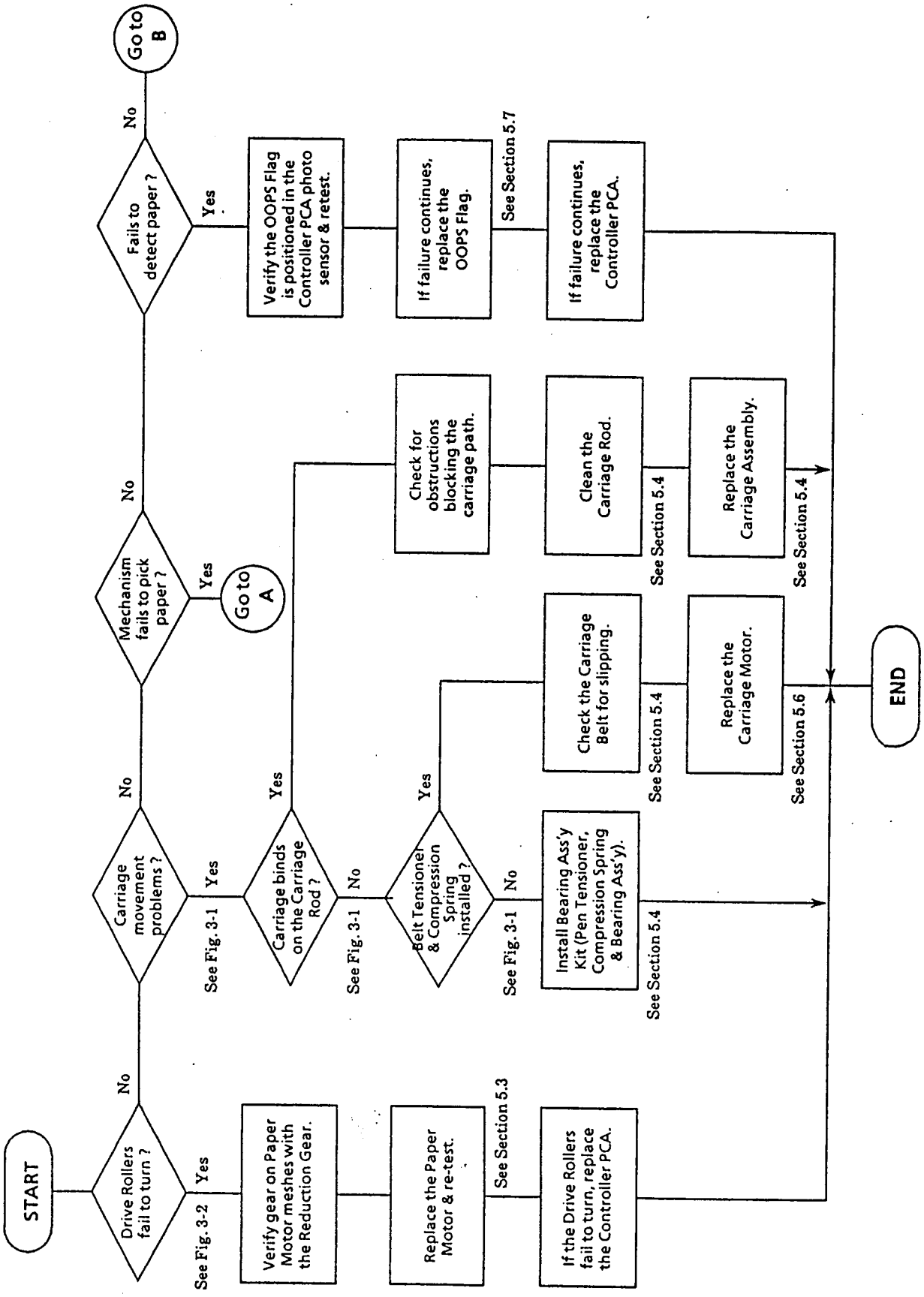
Unit detects the following three conditions.

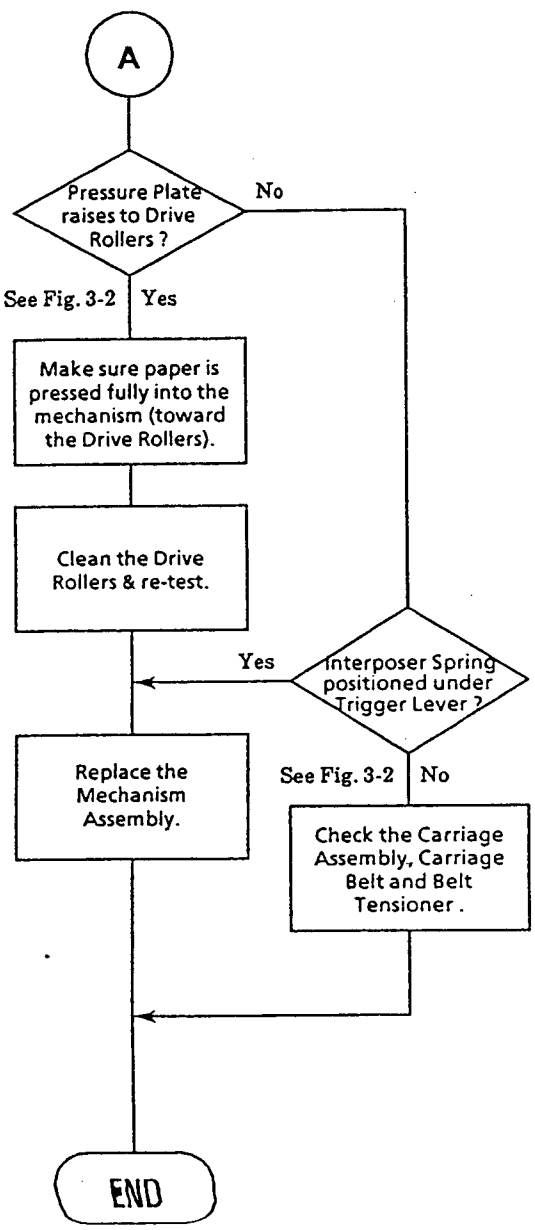
a) The cartridge has ink for at least 10 million dots. The cartridge can print continually.
b) The cartridge has ink for at least 4 million dots. The cartridge can print continually.
c) The cartridge does not have enough ink to printout. The cartridge cannot print continually. Unit will indicate out-of ink condition and stop printing.

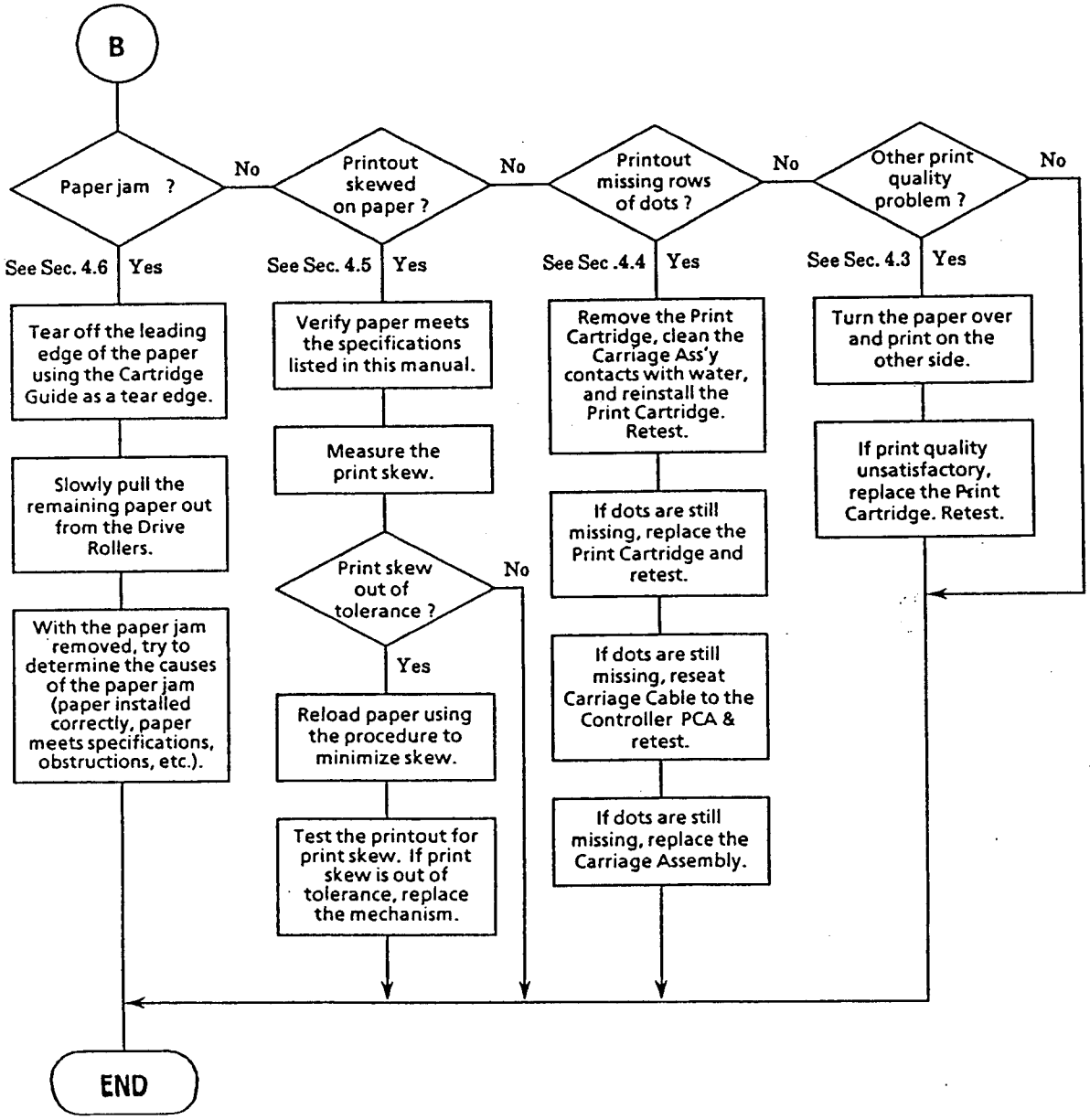
Chapter 4
Troubleshooting

4.1 Overall Troubleshooting Flowchart 4-2
4.2 Print Cartridge Expiration Information 4-4
4.3 Print Quality Problems 4-5
4.4 Printout Missing Dots 4-6
4.5 Troubleshooting Print Skew 4-7
4.6 Clearing Paper Jam 4-8

4.1 Overall Troubleshooting Flowchart


START
Drive Rollers fail to turn ?
No
Yes
See Fig. 3-2
Verify gear on Paper Motor meshes with the Reduction Gear.
Replace the Paper Motor & re-test.
See Section 5.3
If the Drive Rollers fail to turn, replace the Controller PCA.
Carriage movement problems ?
No
Yes
See Fig. 3-1
Carriage binds on the Carriage Rod ?
No
Yes
See Fig. 3-1
Belt Tensioner & Compression Spring installed ?
No
Yes
See Fig. 3-1
Install Bearing Ass'y Kit (Pen Tensioner, Compression Spring & Bearing Ass'y).
See Section 5.4
Check the Carriage Belt for slipping.
See Section 5.4
Replace the Carriage Motor.
See Section 5.6
Check for obstructions blocking the carriage path.
Clean the Carriage Rod.
See Section 5.4
Replace the Carriage Assembly.
See Section 5.4
Mechanism fails to pick paper ?
No
Yes
Go to A
Fails to detect paper ?
No
Yes
Go to B
Verify the OOPS Flag is positioned in the Controller PCA photo sensor & retest.
If failure continues, replace the OOPS Flag.
See Section 5.7
If failure continues, replace the Controller PCA.
END


A
Pressure Plate raises to Drive Rollers ?
No
See Fig. 3-2
Yes
Make sure paper is pressed fully into the mechanism (toward the Drive Rollers).
Clean the Drive Rollers & re-test.
Interposer Spring positioned under Trigger Lever ?
Yes
See Fig. 3-2
No
Replace the Mechanism Assembly.
Check the Carriage Assembly, Carriage Belt and Belt Tensioner .
END


B
Paper jam ?
No
Printout skewed on paper ?
No
Printout missing rows of dots ?
No
Other print quality problem ?
No
See Sec. 4.6
Yes
Tear off the leading edge of the paper using the Cartridge Guide as a tear edge.
Slowly pull the remaining paper out from the Drive Rollers.
With the paper jam removed, try to determine the causes of the paper jam (paper installed correctly, paper meets specifications, obstructions, etc.).
See Sec. 4.5
Yes
Verify paper meets the specifications listed in this manual.
Measure the print skew.
Print skew out of tolerance ?
No
Yes
Reload paper using the procedure to minimize skew.
Test the printout for print skew. If print skew is out of tolerance, replace the mechanism.
See Sec .4.4
Yes
Remove the Print Cartridge, clean the Carriage Ass'y contacts with water, and reinstall the Print Cartridge. Retest.
If dots are still missing, replace the Print Cartridge and retest.
If dots are still missing, reseat Carriage Cable to the Controller PCA & retest.
If dots are still missing, replace the Carriage Assembly.
See Sec. 4.3
Yes
Turn the paper over and print on the other side.
If print quality unsatisfactory, replace the Print Cartridge. Retest.
END

4.2 Print Cartridge Expiration Information

The Print Cartridge has a specified life:

1) Eighteen months sealed in the Print Cartridge container
2) 90 days in the machine

Ink can evaporate through the nozzles, reducing the Print Cartridge life. Therefore, keep the Print Cartridges in their sealed container or capped by the GPM Service Station (parked in the "home position").

Note : For more tips on maintaining the Print Cartridge life, read "Print Cartridge Tips" in Chapter 2.

The Print Cartridge life can be determined as follows:

1) The Print Cartridge box (box the Print Cartridge is packaged in) has a "Use Before" date stamped on the box. The date is a month/year expiration date.
2) A manufacturing code of eight characters (letters and numbers) is printed on the Print Cartridge above the contacts. This manufacturing code identifies when the Print Cartridge was produced. To determine when the Print Cartridge was manufactured, read the five numbers in the manufacturing code:
   a) The first number (third character from the left) identifies the year.

      For example, a "1" indicates the Print Cartridge was manufactured in 1991.
   b) The second and third numbers (fourth and fifth characters from the left) identify the month.

      For example, an "11" indicates the Print Cartridge was produced in the month of November.
   c) The fourth and fifth numbers (six and seventh characters from the left) identify the day the Print Cartridge was manufactured.

From the manufacturing code, you can determine the expiration date:

Manufacturing Date + 18 months (sealed in the container) or 90 days after container is opened.

4.3 Print Quality Problems

This section gives possible causes for print quality problems. If your printout is missing dots, read "Printout Missing Dots" in Section 4.4.

If your print appears faint, fuzzy, inconsistent, or fading, check the following:

1) Has the Print Cartridge passed its expiration date ? If so, replace the Print Cartridge.
2) Print quality may be caused by the paper.
   a) Verify if the paper is inkjet or special coated paper. Although the GPM is a Thermal Inkjet mechanism, it has been designed to work with plain paper. Special coated paper will not damage the mechanisms but it may not produce satisfactory print quality.
   b) Verify that the paper meets the listed paper specifications.
   c) Turn the paper stack over and try printing on the other side of the paper. If print quality returns, no further troubleshooting is necessary.
   d) Even though some paper may meet the listed paper specifications, the paper may not be compatible with the Print Cartridge Ink characteristics. Try a different brand or type of paper.
3) The Print Cartridge may be running out of ink. A Print Cartridge running out of Ink will initially exhibit blotchy printing then lose increasingly more rows of dots. Replace the Print Cartridge.

Note 1 : Read "Print Cartridge Tips" in Chapter 2 for suggestions on maintaining GPM Print Cartridge.

Note 2 : The GPM has been designed to work well with most types of paper, but some variables of paper composition may significantly affect print quality and paper handling. Most paper manufactured for high-quality photocopying yields good results for general applications. Paper should be tested fully before it is purchased in order to ensure desirable performance.

4.4 Printout Missing Dots

Check the following if printouts are missing one or more rows of dots:

1) Check to see if the Print Cartridge has passed its expiration date.
   (See "Print Cartridge Expiration Information" in Section 4.3.)
2) The Print Cartridge may not be making good contact with the Carriage Assembly.
   a) The cartridge may not be pressed securely against the Carriage Assembly Contacts. Remove the Print Cartridge and reinstall, making sure the cartridge "clicks" into the Carriage Assembly.
   b) The Carriage Assembly or Print Cartridge Contacts may be dirty. Clean the Print Cartridge and Carriage Assembly Contacts using a swab moistened with water.

   Do not clean the Print Cartridge nozzles.

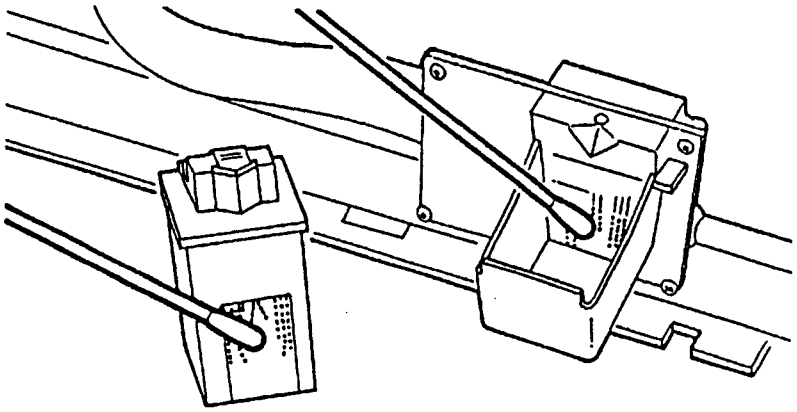


Fig. 4-2 : Cleaning the Contacts

3) The Print Cartridge may be running out of Ink. Replace the Print Cartridge.
4) The Print Cartridge may be faulty. Replace the Print Cartridge.
5) The Flat Flex Cable between the Carriage Assembly and Controller PCA may not be making good contact. Reinstall the Flat Flex Cable on the Controller PCA.
6) The Carriage Assembly may be faulty. Replace the Carriage Assembly. See Section 5.7, Instructions on Removing the Carriage Assembly.
7) The Controller PCA is faulty. Replace the Controller PCA. See section 5.6, Instructions on Removing the Controller PCA.

4.5 Troubleshooting Print Skew

Print skew occurs when the movement of paper is not square to the carriage movement. The result is inconsistent print margins along the paper's edge.

(1) Print Skew Specifications

The GPM print skew specifications is ±0.006 inches per inch on 95% of all pages printed. How paper is located and the squareness of the paper can impact print skew.

(2) Loading Paper

Loading paper in the GPM can impact the print skew. It is important to have the paper placed squarely in the Paper Supply Tray and aligned against the right wall.

(3) Measuring Paper Squareness

Print skew may be impacted by the squareness of the paper. The industry standard for paper squareness ±0.003 inches per inch. This measurement must be added to the print skew specification to obtain a true overall print skew specification. Test the paper squareness by printing on one side of the paper, flipping the paper over, then printing the same information on the other side. If the print slopes down on one side and up on the other side, the squareness of the paper may be impacting the print skew. In this case, try different paper or forms.

(4) Measuring Print Skew

Measure print skew on at least 20 pages. Measurements are best made using a dial caliper, but a good linear scale may be used with less accuracy. Use the following procedure to measure print skew:

1) Print a test pattern using test mode no. 0.
2) Measure the distance from the edge of the paper to the top line printed on the test pattern (distance A).

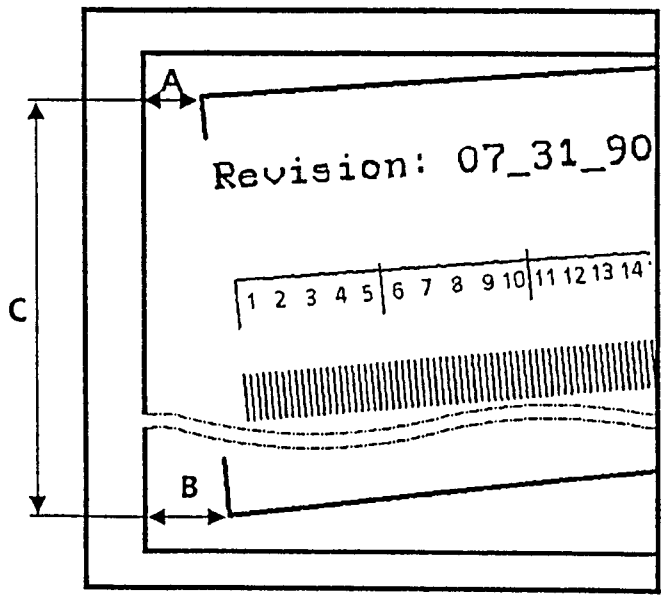


Fig. 4-3 : Measuring Print Skew

3) Measure the distance from edge of the paper to the bottom line printed on the test pattern(distance **B**).
4) Measure the distance between the two points in step 2 and 3 (distance **C**).
5) Use the following equations to determine the print skew.
   If **A** > **B** then : $\frac{A - B}{C}$
   If **B** > **A** then : $\frac{B - A}{C}$
6) Repeat the process for at least 20 pages. The measurement should be within the print skew specification on 19 of 20 pages.

(5) Correcting Print Skew

If the paper is square and the paper is loaded properly, but print skew is out of specification.

1) Check the condition of the Pinch Roller and Pinch Springs, replace if it is deformed. See section 5.8.
2) Replace the Mechanism Chassis.

4.6 Clearing Paper Jams

Use the following procedure to remove paper from the GPM:

1) Slide the Carriage Assembly to the right side of the mechanism.
2) Tear off any paper beyond the Carriage Guide by using the Carriage Guide as a tear edge.

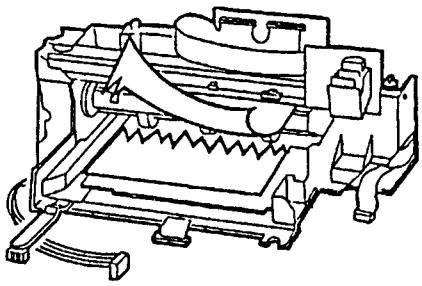


Fig. 4-4 : Clearing a Paper Jam

3) Slowly pull the remaining paper out from the Drive Rollers.

Chapter 5
Replacement

5.1 Introduction 5-2
5.2 Tools 5-2
5.3 Service Station Parts 5-3
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5.5 Paper Motor 5-7
5.6 Controller PCA 5-8
5.7 Carriage Assembly 5-9
5.8 OOPS Flag and Pinch Rollers 5-10

5. Replacement

5.1 Introduction

This chapter covers the following removal procedures:

1) Paper Motor
2) Carriage Assembly
3) Carriage Motor
4) Controller PCA
5) OOPS Flag and Pinch Rollers
6) Service Station Parts

Unless specified, reverse the removal procedure when installing the replacement part or assembly.

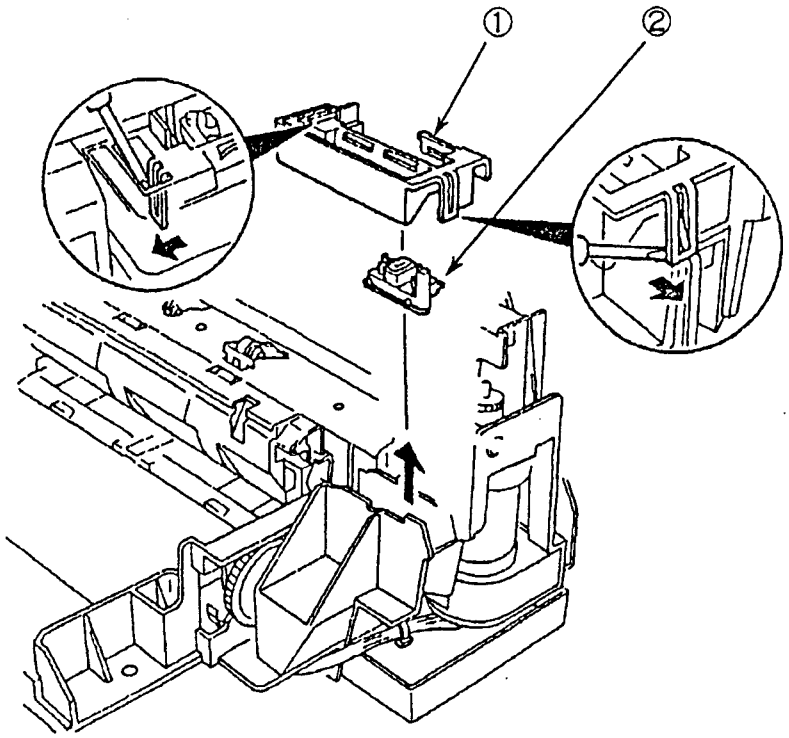
5.2 Tools

The following tools are recommended for the removal and replacement of GPM parts and assemblies:

1) Phillips Screwdriver
2) Flat Blade Screwdriver
3) Jewelers Screwdriver
4) Torx Screwdriver (T-10)

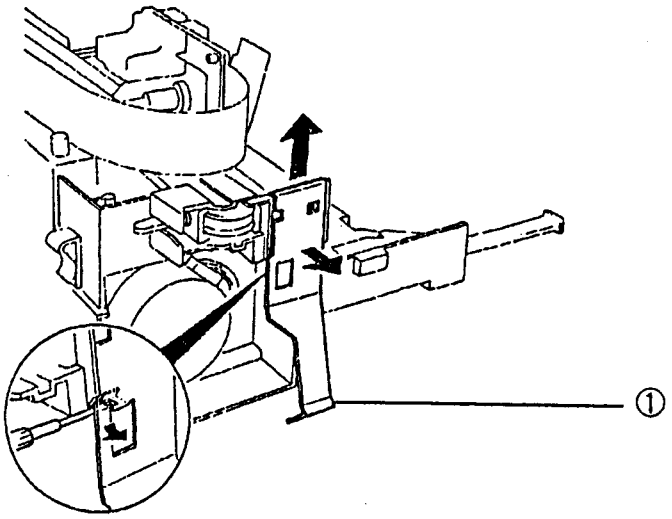
5.3 Service Station Parts (1011)

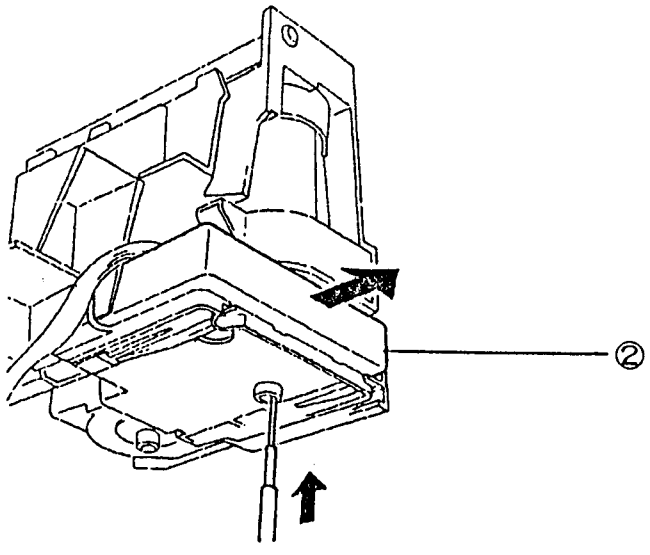
Step	Figure	Disassembly Procedure/Parts to be removed
1		Slide the Carriage Assembly to the left.
2	①	Bracket
	②	Sled



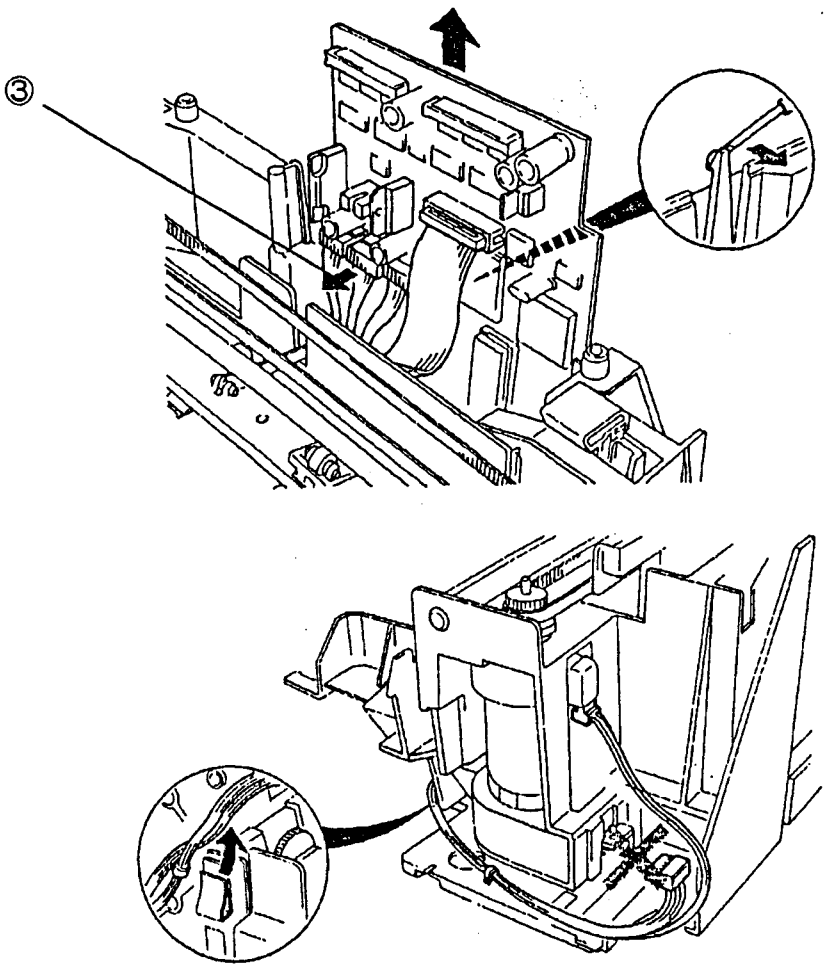
5.4 Carriage Motor (1014)

Step	Figure	Disassembly Procedure/Parts to be removed
1		Remove the Service Station Parts (see section 5.3).
2	①	ESD Clip (see Note 2).
3	②	Ink Tray
4	③	One Connector (J5)
		Remove the cables from the clip on the bottom of the GPM.
5	④	Bearing Ass'y Kit / Pulley Holder and Spring (1009)
	⑤	Bearing Ass'y Kit / Pulley (1009)
6	⑥	One Screw (1016)
		Carriage Motor (1014)

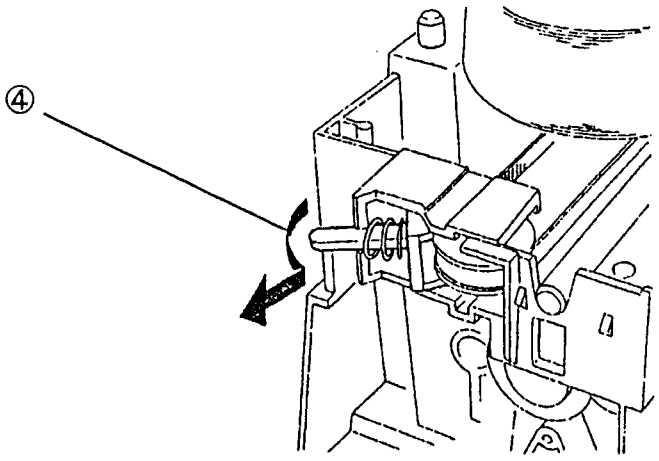


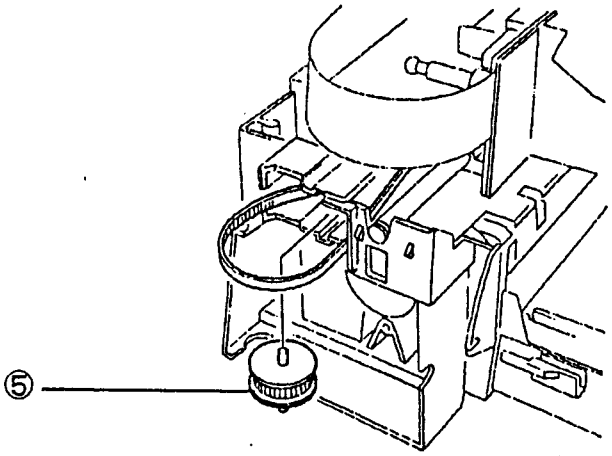


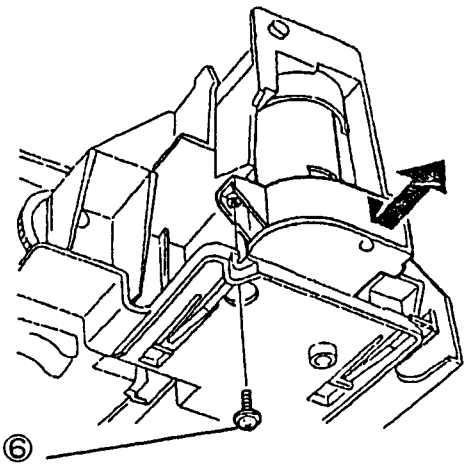
5.4 Carriage Motor (1014)



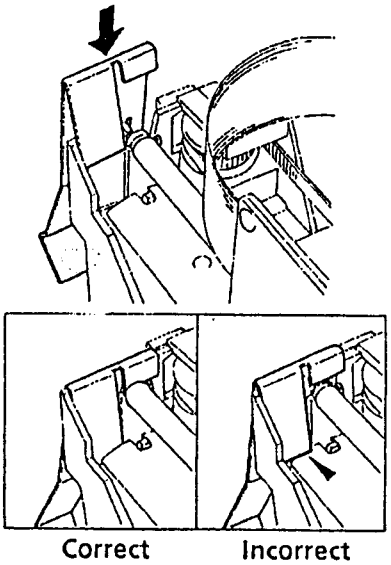
Note 1: Do not try to disconnect the lower portion of the cable from the carriage motor. The carriage motor and cable are replaced as one assembly.





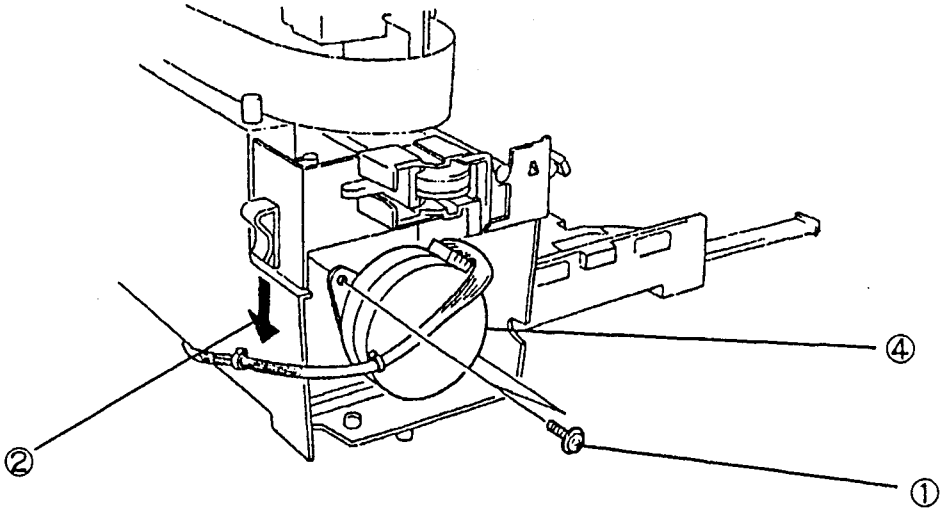


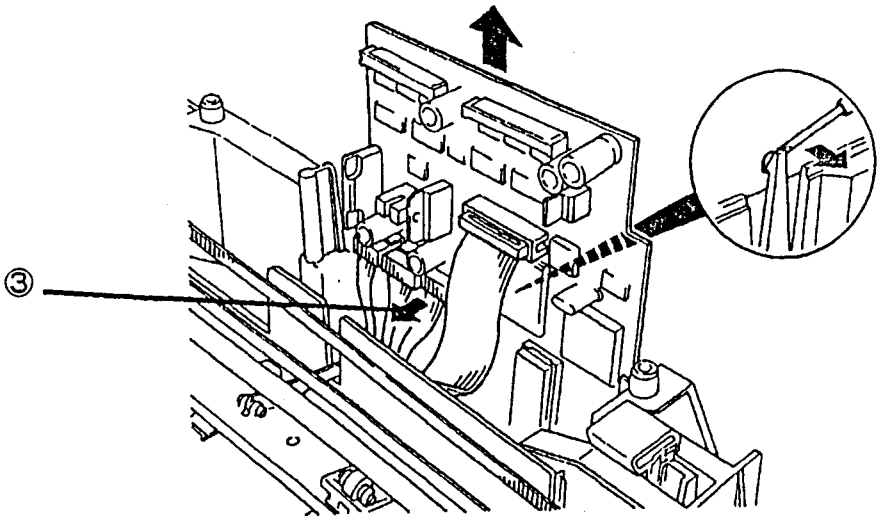
Note 2: When reinstalling the ESD Clip, insert the edge of the ESD Clip into the notch of the shaft and between the frame and the guide plate as shown below.



5.5 Paper Motor (1012)

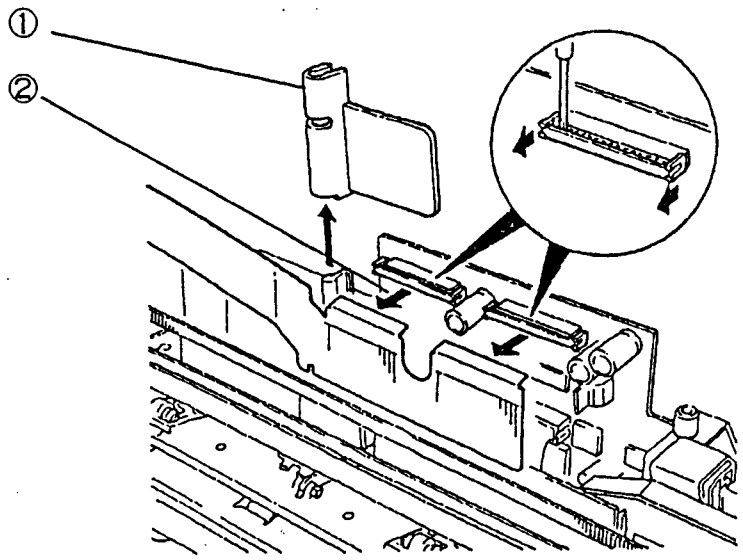
Step	Figure	Disassembly Procedure/Parts to be removed
1	①	Two Screws (1016)
2	②	One Cable
	③	One connector by raising the Controller PCA.
3	④	Paper Motor (1012)

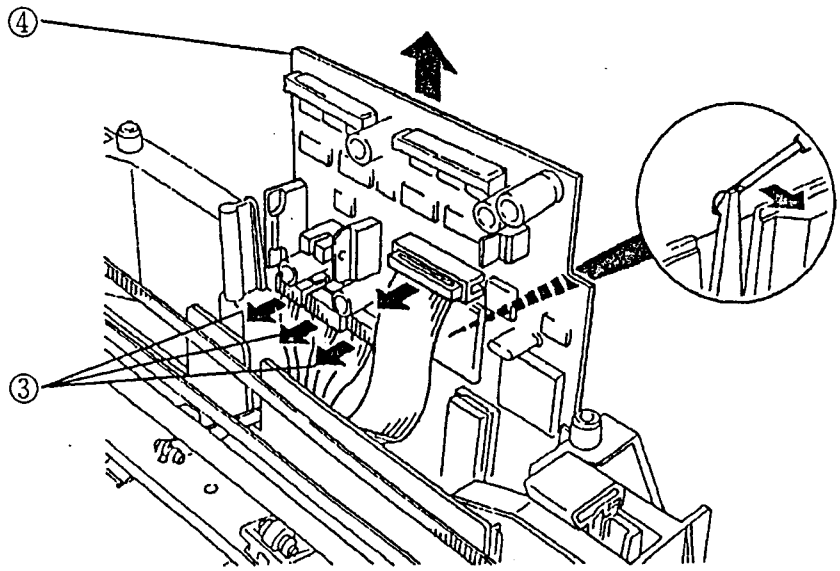




5.6 Controller PCA (1018)

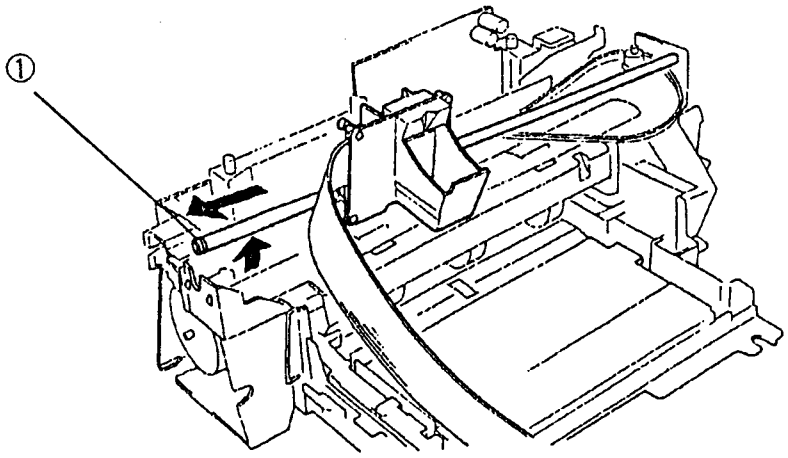
Step	Figure	Disassembly Procedure/Parts to be removed
1		Remove the cables of the Carriage Motor and Paper Motor from the clips (see section 5.4 step 4 and section 5.5 step 1).
2	①	Data Cable Guide (1020)
	②	Data Cable (1003)
3	③	Four connectors
	④	Controller PCA (1018)



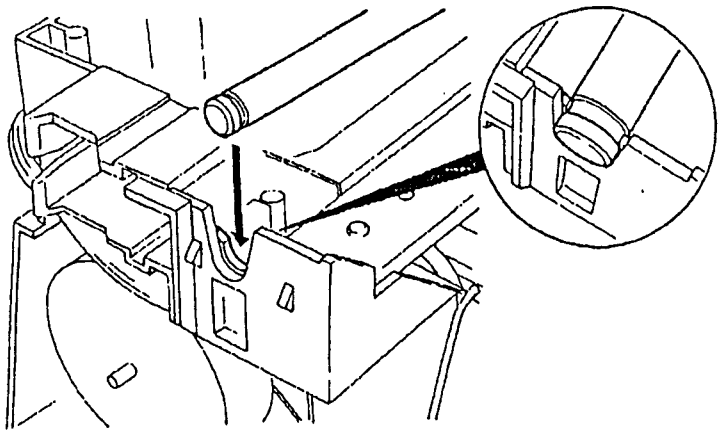


5.7 Carriage Assembly (1008 & 1004)

Step	Figure	Disassembly Procedure/Parts to be removed
1		Remove the ESD Clip (see section 5.4).
2		Disconnect the Data Cable (see section 5.6)
3	①	Carriage Assembly (1008 & 1004).

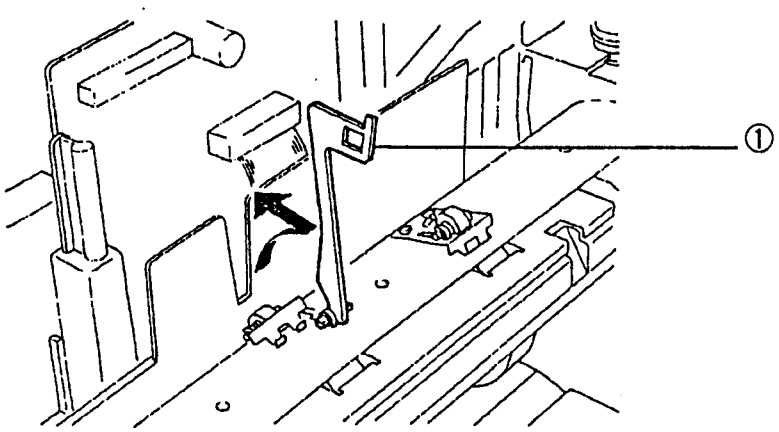


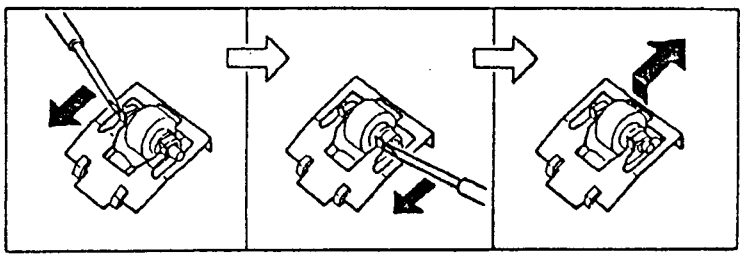
Note : When reinstalling the Carriage Assembly, fit the notch of the shaft into the notch of the frame.

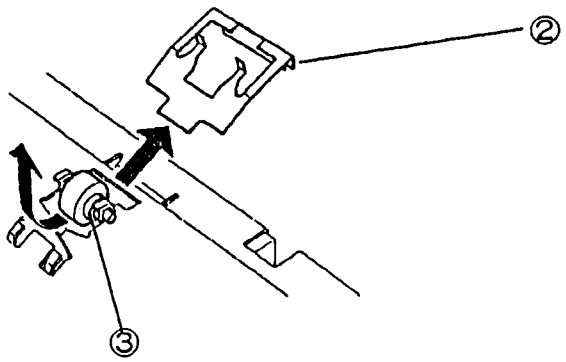


5.8 OOPS Flag (1007) and Pinch Roller (1006)

Step	Figure	Disassembly Procedure/Parts to be removed
1		Remove the Carriage Assembly (see section 5.7).
2	①	OOPS Flag (1007)
3	②	Pinch Spring (1005)
	③	Pinch Roller (1006)







Chapter 6

Schematic Diagrams & Parts List

6.1 Parts List 6-2
6.2 Schematic Diagrams 6-5

6. Schematic Diagrams & Parts List

6.1 Parts List

Ref. No.	Part No.	Description	Country
U1	DZZHPA67934	Integrated Circuit, ULN2013L	
U2	DZZHPA67934	Integrated Circuit, ULN2013L	
U3	DZZHPA67934	Integrated Circuit, ULN2013L	
U4	DZZHPA67934	Integrated Circuit, ULN2013L	
U5	DZZHPA67934	Integrated Circuit, ULN2013L	
U6	DZZHPA67934	Integrated Circuit, ULN2013L	
U7	DZZHPA67934	Integrated Circuit, ULN2013L	
U8	DZZHPA67934	Integrated Circuit, ULN2013L	
U9	DZZHPA67933	Integrated Circuit, 74HC4514	
U10	DZZHPA67933	Integrated Circuit, 74HC4514	
U11	DZZHPA67936	Integrated Circuit, LM339	
U12	DZZHPA67933	Integrated Circuit, 74HC4514	
U13	DZZHPA67933	Integrated Circuit, 74HC4514	
U14	DZZHPA67937	Integrated Circuit, ADC0831	
U15	DZZHPA67932	Integrated Circuit, PAL20RA10	
U16	DZZHPA67935	Integrated Circuit, LM614CWM	
U17	DZZHPA67929	Integrated Circuit	
U18	DZZHPA67928	Integrated Circuit, Z80180	
U19	DZZHPA67930	Integrated Circuit, EP ROM	
U20	DZZHPA67931	Integrated Circuit, S RAM	
U21	DZZHPA67931	Integrated Circuit, S RAM	
XU19	DZZHPA67927	IC Socket, 28P	
Q1	DZZHPA67940	Integrated Circuit, FT5754M	
Q2	DZZHPA67939	Integrated Circuit, L298N	
Q3	DZZHPA67969	Transistor, NPN, MMBT4401	
Q4	DZZHPA67968	Transistor, PNP, MMBT4403	
Q5	DZZHPA67941	Integrated Circuit, L149	
Q6	DZZHPA67968	Transistor, PNP, MMBT4403	
CR1	DZZHPA67970	Dual Diode	
CR2	DZZHPA67970	Dual Diode	
CR3	DZZHPA67945	Diode	
CR4	DZZHPA67945	Diode	
CR5	DZZHPA67945	Diode	
CR6	DZZHPA67945	Diode	
VR1	DZZHPA67946	Diode, Zener, 1N5368B	
SW1	DZZHPA67938	Sensor, Photo	
FL1	DZZHPA67971	Filter, EMI	
M1	DZZHPA67972	Heat Sink	
V1	DZZHPA67921	Crystal, 16MHz	

Ref. No.	Part No.	Description	Country
J1	DZZHPA67922	Connector, 22P	
J2	DZZHPA67922	Connector, 22p	
J3	DZZHPA67924	Connector, 20p	
J4	DZZHPA67923	Connector, 6p	
J5	DZZHPA67925	Connector, 7p	
J6	DZZHPA67926	Connector, 6p	
R1	DZZHPA67943	Resistor, 12.7Ω/0.5W	
R2	DZZHPA67943	Resistor, 12.7Ω/0.5W	
R3	DZZHPA67943	Resistor, 12.7Ω/0.5W	
R4	DZZHPA67943	Resistor, 12.7Ω/0.5W	
R5	DZZHPA67964	Resistor, 10KΩ/0.125W	
R6	DZZHPA67957	Resistor, 1.078KΩ/0.125W	
R7	DZZHPA67956	Resistor, 7.5KΩ/0.125W	
R8	DZZHPA67956	Resistor, 7.5KΩ/0.125W	
R9	DZZHPA67956	Resistor, 7.5KΩ/0.125W	
R10	DZZHPA67965	Resistor, 47KΩ/0.125W	
R11	DZZHPA67958	Resistor, 1KΩ/0.125W	
R12	DZZHPA67965	Resistor, 47KΩ/0.125W	
R13	DZZHPA67962	Resistor, 121Ω/0.125W	
R14	DZZHPA67964	Resistor, 10KΩ/0.125W	
R15	DZZHPA67964	Resistor, 10KΩ/0.125W	
R16	DZZHPA67966	Resistor, 1KΩ/0.125W	
R17	DZZHPA67967	Resistor, 100Ω/0.125W	
R18	DZZHPA67966	Resistor, 1KΩ/0.125W	
R19	DZZHPA67961	Resistor, 17.8KΩ/0.125W	
R20	DZZHPA67960	Resistor, 6.81KΩ/0.125W	
R21	DZZHPA67967	Resistor, 100Ω/0.125W	
R22	DZZHPA67944	Resistor, 681Ω/0.5W	
R23	DZZHPA67966	Resistor, 1KΩ/0.125W	
R24	DZZHPA67959	Resistor, 12.1KΩ/0.125W	
R25	DZZHPA67964	Resistor, 10KΩ/0.125W	
R26	DZZHPA67966	Resistor, 1KΩ/0.125W	
R27	DZZHPA67966	Resistor, 1KΩ/0.125W	
R28	DZZHPA67966	Resistor, 1KΩ/0.125W	
R29	DZZHPA67966	Resistor, 1KΩ/0.125W	
R30	DZZHPA67963	Resistor, 330Ω/0.125W	
R31	DZZHPA67966	Resistor, 1KΩ/0.125W	
R32	DZZHPA67966	Resistor, 1KΩ/0.125W	
R33	DZZHPA67964	Resistor, 10KΩ/0.125W	
R34	DZZHPA67964	Resistor, 10KΩ/0.125W	
R35	DZZHPA67964	Resistor, 10KΩ/0.125W	
R36	DZZHPA67964	Resistor, 10KΩ/0.125W	

Ref. No.	Part No.	Description	Country
C1	DZZHPA67951	Capacitor, 0.1μF/50V	
C2	DZZHPA67942	Capacitor, 330μF/35V	
C3	DZZHPA67942	Capacitor, 330μF/35V	
C4	DZZHPA67942	Capacitor, 330μF/35V	
C5	DZZHPA67951	Capacitor, 0.1μF/50V	
C6	DZZHPA67951	Capacitor, 0.1μF/50V	
C7	DZZHPA67953	Capacitor, 0.01μF/50V	
C8	DZZHPA67953	Capacitor, 0.01μF/50V	
C9	DZZHPA67948	Capacitor, 22pF/50V	
C10	DZZHPA67953	Capacitor, 0.01μF/50V	
C11	DZZHPA67953	Capacitor, 0.01μF/50V	
C12	DZZHPA67952	Capacitor, 1000pF/50V	
C13	DZZHPA67951	Capacitor, 0.1μF/50V	
C14	DZZHPA67952	Capacitor, 1000pF/50V	
C15	DZZHPA67953	Capacitor, 0.01μF/50V	
C16	DZZHPA67949	Capacitor, 470pF/50V	
C17	DZZHPA67952	Capacitor, 1000pF/50V	
C18	DZZHPA67953	Capacitor, 0.01μF/50V	
C19	Not used		
C20	Not used		
C21	DZZHPA67951	Capacitor, 0.1μF/50V	
C22	Not used		
C23	DZZHPA67950	Capacitor, 10pF/50V	
C24	DZZHPA67942	Capacitor, 330μF/35V	
C25	DZZHPA67952	Capacitor, 1000pF/50V	
C26	DZZHPA67954	Capacitor, 100pF/50V	
C27	DZZHPA67951	Capacitor, 0.1μF/50V	
C28	DZZHPA67951	Capacitor, 0.1μF/50V	
C29	DZZHPA67942	Capacitor, 330μF/35V	
C30	DZZHPA67952	Capacitor, 1000pF/50V	
C31	DZZHPA67953	Capacitor, 0.01μF/50V	
C32	DZZHPA67954	Capacitor, 100pF/50V	
C33	DZZHPA67951	Capacitor, 0.1μF/50V	
C34	DZZHPA67955	Capacitor, 33μF/10V	
C35	DZZHPA67953	Capacitor, 0.01μF/50V	
C36	DZZHPA67953	Capacitor, 0.01μF/50V	
C37	DZZHPA67953	Capacitor, 0.01μF/50V	
C38	DZZHPA67953	Capacitor, 0.01μF/50V	
C39	DZZHPA67953	Capacitor, 0.01μF/50V	
	DZZHPA67947	PC Board Ass'y, Controller	

6.2 Schematic Diagram

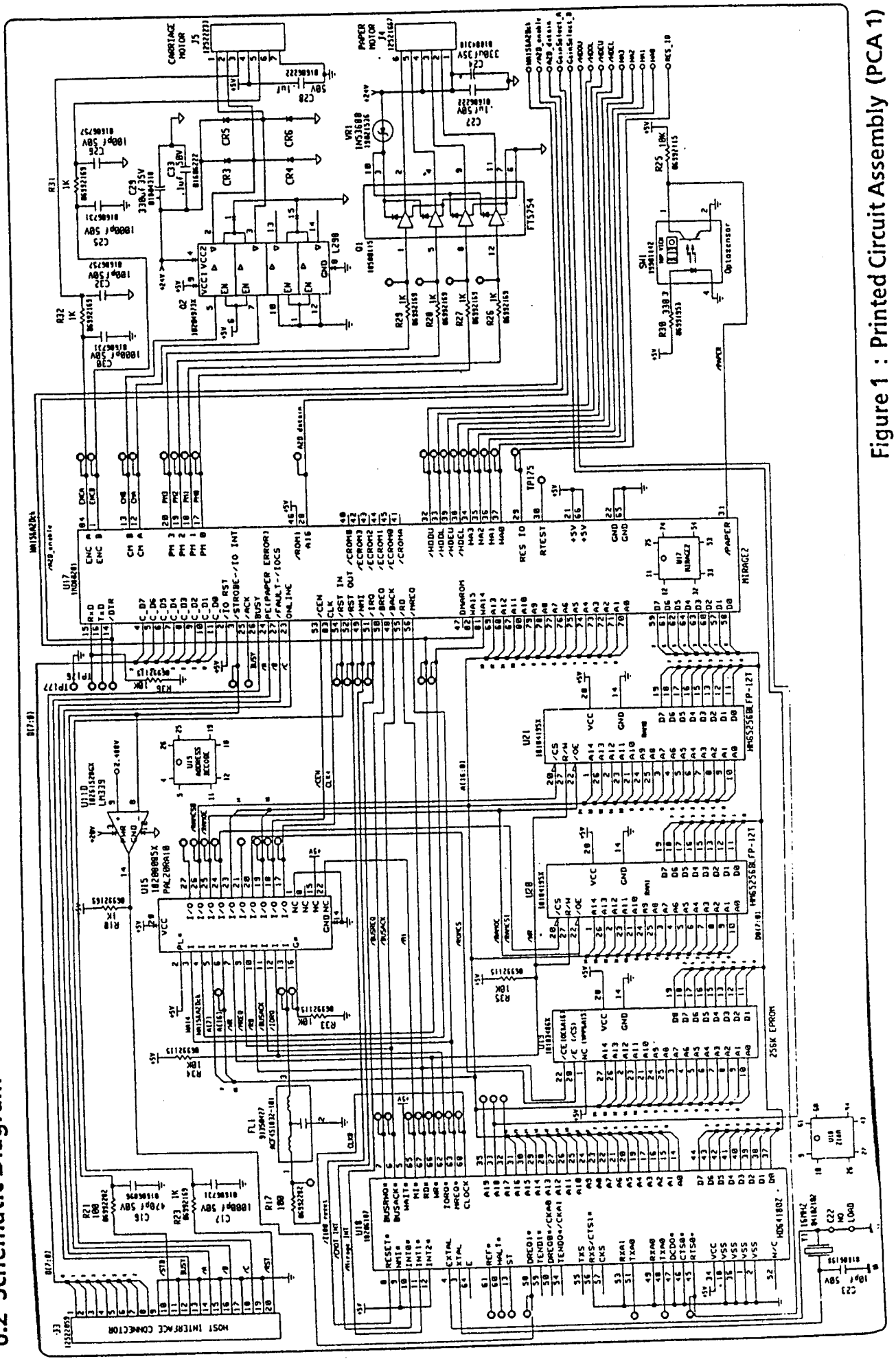


Figure 1 : Printed Circuit Assembly (PCA 1)

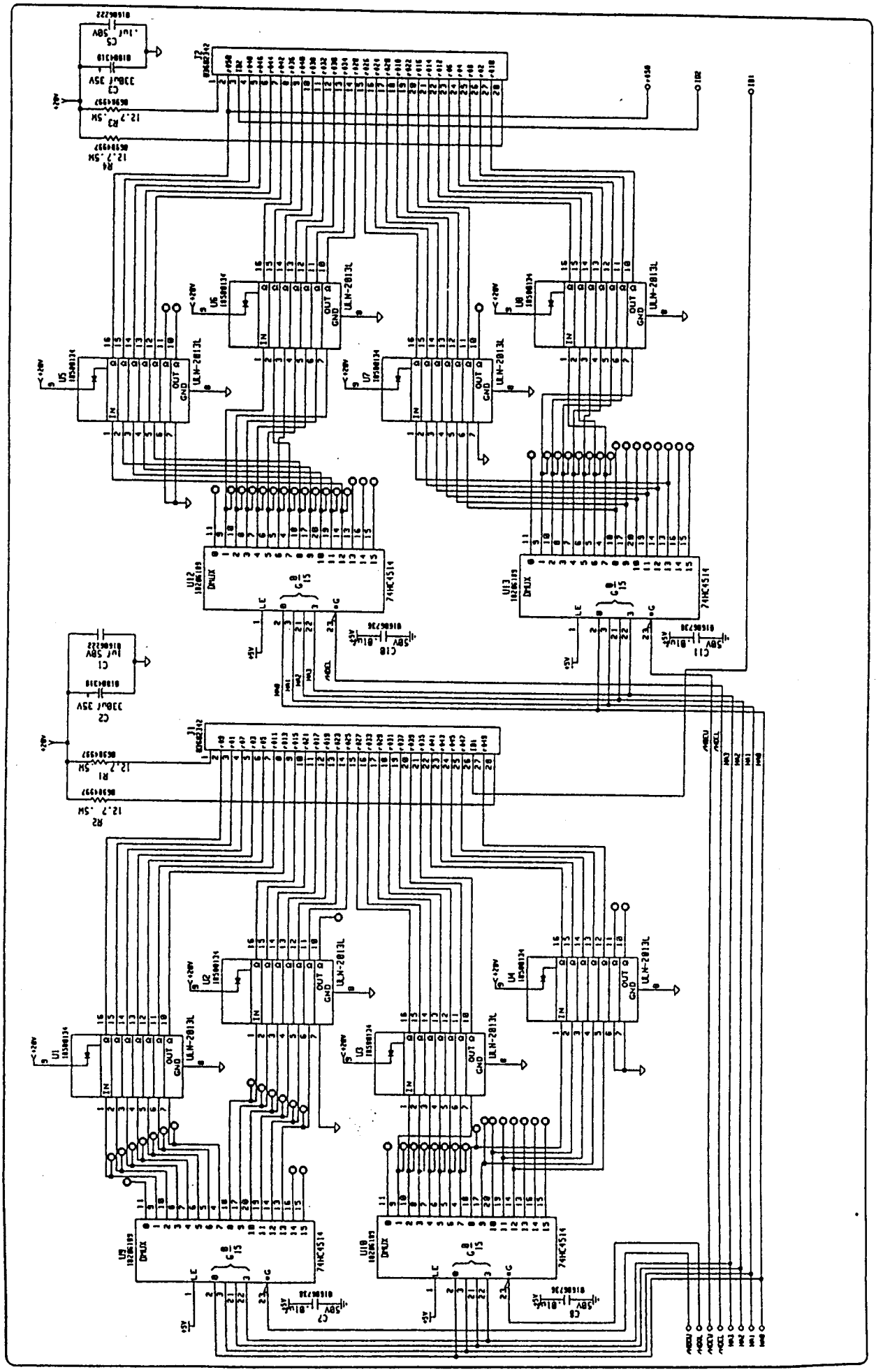


Figure 2 : Printed Circuit Assembly (PCA 2)

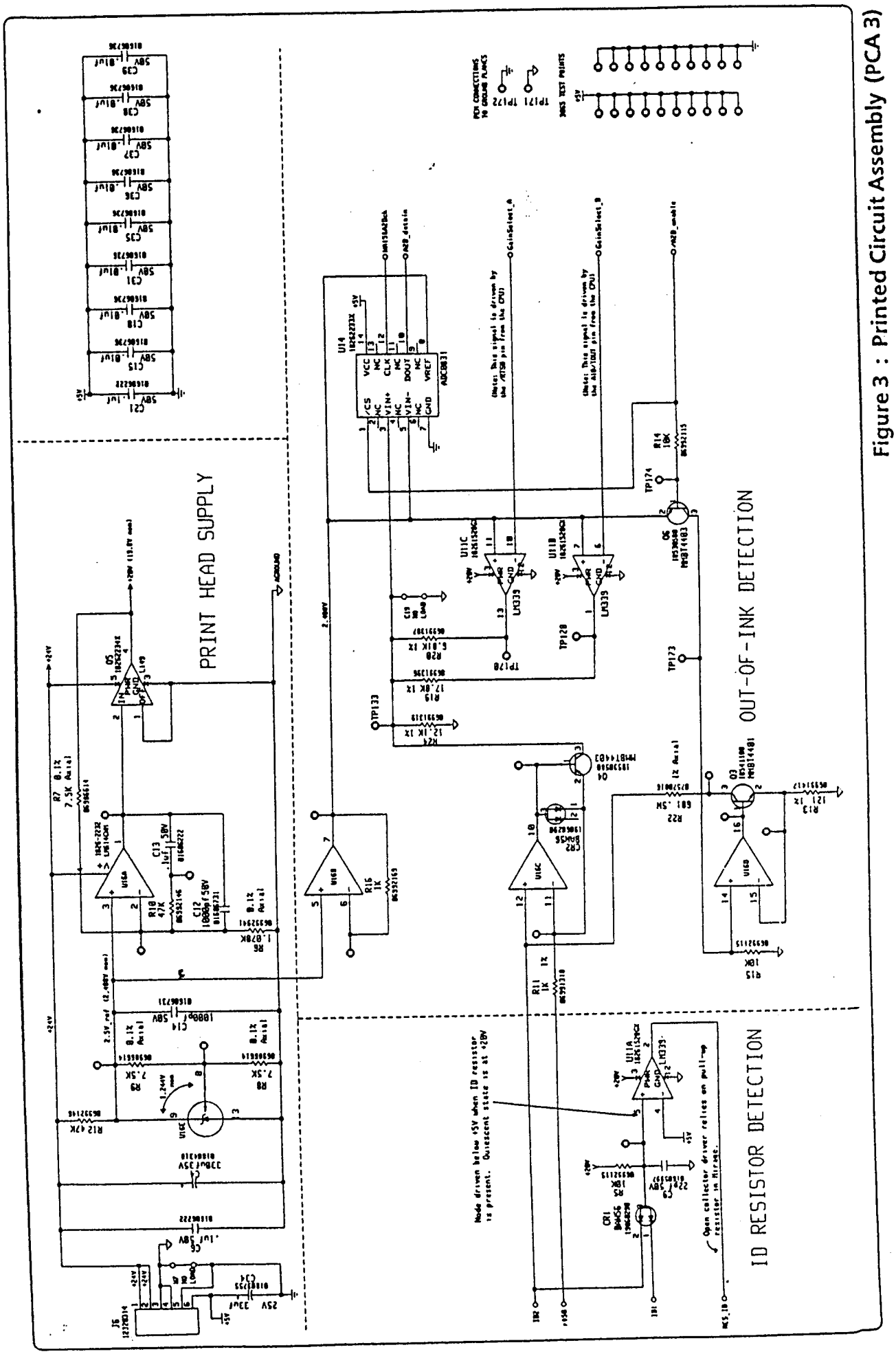


Figure 3 : Printed Circuit Assembly (PCA 3)

Chapter 7
Exploded View & Parts List

7.1 Parts List 7-2
7.2 Exploded View 7-3

7. Exploded View & Parts List

7.1 Parts List

Ref. No.	Part No.	Description	Location	Country
1001	DZZHPA67901	Mechanism Chassis	I6	All
1002	DZZHPA67902	Clip, ESD	A2	All
1003	DZZHPA67903	Cable Ass'y, Data	B7	All
1004	DZZHPA67904	Carriage Rod	B2	All
1005	DZZHPA67905	Spring, Pinch	F3·G4	All
1006	DZZHPA67906	Roller, Pinch	F4·G4	All
1007	DZZHPA67907	OOPS Flag	I4	All
1008	DZZHPA67908	Carriage Ass'y	F3	All
1009	DZZHPA67912	Pulley Ass'y Kit	D2	All
1010	DZZHPA67913	Belt, Carriage	C3	All
1011	DZZHPA67914	Service Station Parts Kit	J1	All
1012	DZZHPA67915	Paper Motor Ass'y	B6	All
1013	DZZHPA67916	Gear, Cluster	A6	All
1014	DZZHPA67974	Carriage Motor Ass'y	K8	All
1015	Not used			
1016	DZZHPA67919	Screw, 4-20	J8·B4	All
1017	DZZHPA67922	Cap, Flex Head Cable	F3	All
1018	DZZHPA67947	PC Board Ass'y, Controller	H1	All
1019	DZZHPA67920	Power Supply Cable	H8	All
1020	DZZHPA67973	Guide, Data Cable	G3	All

7.2 Exploded View

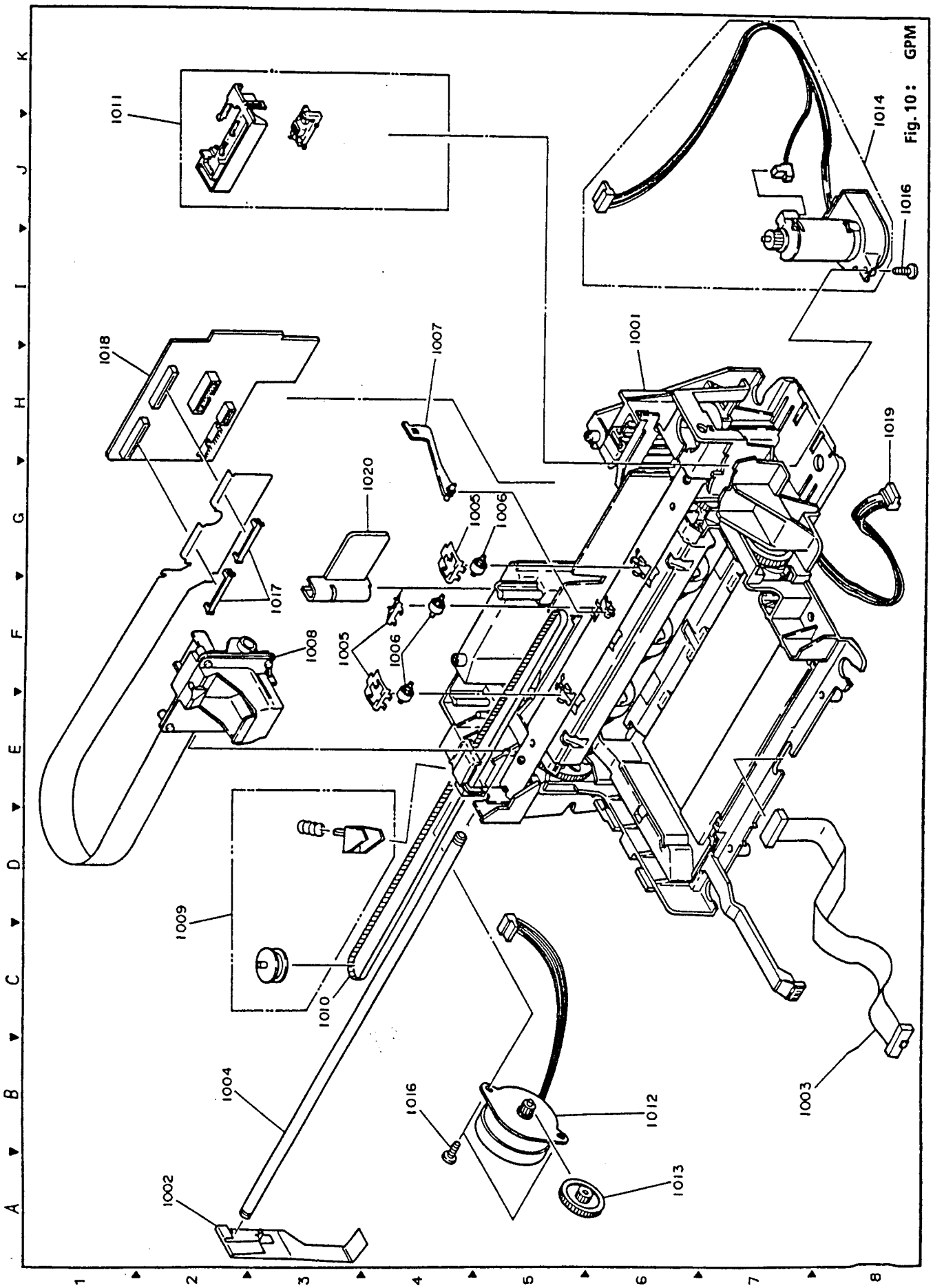


Fig. 10 : GPM